

THREE BANKSIA WAVESP 33.6 MODEMS TO WIN!

PC PowerPlay

THE AUSTRALIAN PC ENTERTAINMENT MAGAZINE

Plus GAMES CD ROM



CARMAGEDDON

Bloody good fun

E3-FULL REPORT

Next Year's games previewed



Tomb Raider 2

Long live Lara!

- Twinsen's Odyssey
- X-COM Apocalypse

BLOOD & SEX IN GAMES

Reality bytes?

3D SOUND

It's here, it's real, it rocks

ON THE CD:

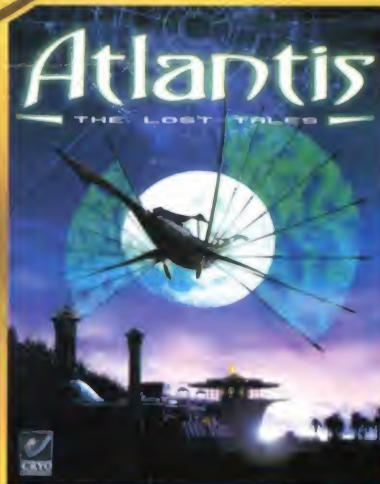
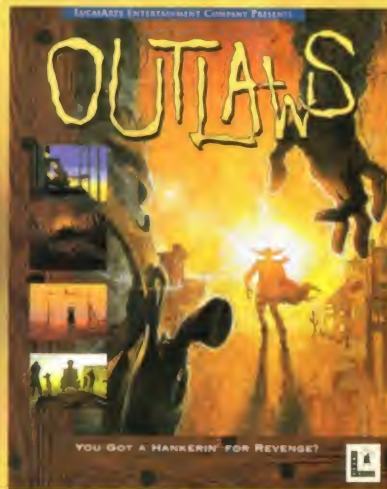


TWINSEN'S ODYSSEY
Need for Speed II
Wipeout XL
Blood
CARMAGEDDON



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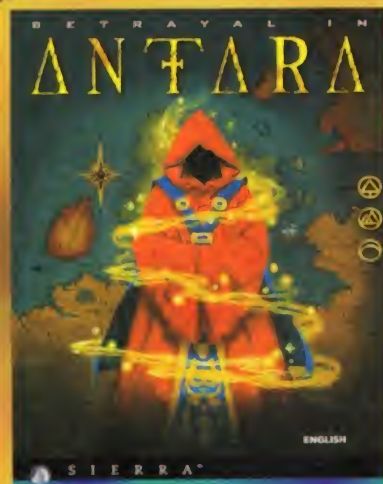
Ubi Soft



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What we're playing: Blood Deathmatch, Moto Racer,
Outlaws, X-Wing vs. TIE, GLQuake, FIFA 97, Mario Kart 64,
Dungeon Keeper, Virtual On

Maj. Ian Lindgren is a *real* Major in the Aust. Army

Editorial



Don't you just hate it when it says "Available Now" in PC PowerPlay, but your games shop swears it isn't even in the country? And won't be for months...

We hate it too.

Here's how it happens:

A phone call comes in from an excited publisher, going something like this:

Them: "Great news! Baby Slaughter 4 is in final beta testing, I'm sending you a review copy now"

Us: "When will it be in the shops"

Them: "The timing's beautiful, it'll be out just a week before your next issue!"

Us: "Yeah right... You positive?!"

Them: "100% positive, guaranteed, absolutely definitely, you got it baby"

Then, one week before the new issue goes out we get a call.

Them: "Great news! My new batch of colostomy bags have arrived! Oh, and Baby Slaughter 4 has been delayed a couple of months."

Us: "DOH!"

Sigh. Happens all the time. It gets your hopes up and it makes us look like wallies. It happened with issue #1 of PowerPlay with Grand Prix 2 (every game mag in the world got shafted badly by MicroProse with that one), and it's just happened again with Dark Reign.

So, we review from these gold beta CDs less and less in an effort to minimise this ugliness. Our New Improved production and printing process means we can review a game out of the final packaging and have it in the newsagent in no time.

The reason these games are delayed is that last minute bugs reveal themselves. These particular bugs tend to be the most critical and the hardest to fix. It's a Murphy thing. Not with Dark Reign. I visited the development HQ and this was one bug-free place.

No, the reason Dark Reign will be late is because of Play Balancing. This means tweaking each unit in the game so that all is fair in multiplayer war. It means making sure bugs like the infamous Red Alert Tank Rush never appear again. In multiplayer Real Time Strategy it is especially important that no Guaranteed Win technique exists. In a game as complex as Dark Reign this is paramount.

I'd rather wait another couple of months for a better game, than participate in the public beta test which most companies prefer, addressing the bugs that customers have so kindly discovered in a patch, much later.

As patience-testing as it is, this is the right attitude. Let's hope this dedication to quality catches on.

Ben

The PC PowerPlay scoring system



90%+ A classic. Either an unquestionable example of superiority within its genre, or a ground breaking game that'll be setting trends.

80-90% A strong, eminently playable game. Hard to fault and likely to still be on the hard drive in 6 months time.

60-80% Competant and generally enjoyable. Flaws or mediocrity hold these games back from higher ratings.

40-60% Average and ordinary. Not bad, not good. Ideal gift

0-40% Bad, really bad. Boring, shamelessly unoriginal, cheap and horrible

contents

CD GUIDE

6

Who needs a life when you've got the PowerPlay cover CD? Games for fun, utilities for tooling around with and that naughty, evil game Carmageddon.

NEWS

11

NZ game censors enter the Dark Age, Bullfrog's Peter Molynux takes a hike, top Virgin heads abandon ship, the fight for the rights to the F-22 gets ugly and much more.

COMPETITIONS

20

Win good big free things.

INTERVIEW: LucasArts' Larry Holland

22

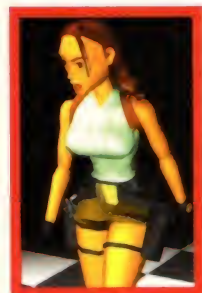
Mr X-Wing vs. TIE Fighter tells PowerPlay what went into the hottest multiplayer action since Quake.



E3 REPORT

26

PowerPlay makes the pilgrimage to games mecca. The newest games and game technology revealed for the first time!



TOMB RAIDER 2 & CORE DESIGN

36

Lara Croft is now the unofficial sex symbol of the games scene. Meet her makers and find out what they've got planned for the awesome sequel.

PROFILE: CRYO

40

This premier French developer is breaking the rules and forging innovative new styles of game design.

SPECIAL FEATURE: SEX & VIOLENCE IN GAMES

44

Do games need it? What would they be without it... This compelling read unravels the mess of lies and propaganda and examines the truth behind adult gaming.

REVIEWS:

50

- Carmageddon
- Twinsen's Odyssey
- X-COM: Apocalypse
- Constructor
- Shadows Over Riva
- Obsidian
- G-Nome
- Tom Clancy SSN
- Helicops
- Chess Wars
- Rocket Jockey
- Battleground: Bull Run
- Battleground: Napoleon
- Battleship
- Jetfighter III: Mission disk
- Tigershark
- Risk



HOTWARE

75

IBM's black beauty Aptiva S, Diamond's Monster Sound - essential hardware, the mother of all game monitors and a new Thrustmaster!

3D TECHNEWS

80

Potent new 3D accelerators benchtested and rated, the Aussie Permedia 3D card, VideoLogic tries again with the Power VR 2 - can it make up for the disappointing Power VR? Find out inside...



TECH.TXT

80

MOTHERBOARDS

Triton II, HX, VX, TX... What does it mean and what do you need for game speed.

3D SOUND

Sound card technology has finally evolved beyond the ancient Sound Blaster standard.

TELSTRA vs. ONLINE GAMERS

Cable Modems should be the bright hope for future online gaming - but not if Telstra have their way...

PLUG 'N' ACTUALLY WORK

How USB and Firewire are about to make life a whole lot easier.



SETUP

98

OK, something's gone horribly wrong with your PC. You can pay a technician, ask a friend that probably hates you by now... Or ask Setup. We give a damn.

ORACLE

102

It is true, they are making games harder... Or at least it might seem that way to some. Stuck? Ask Oracle for divine guidance.

CODE

105

Cheat codes for talentless losers.

WEBSTALK

106

Java games. They're free, they're fun and you may just stumble across and old favourite online.

LETTERS

108

PowerPlay readers tackle the tough issue head-on.

FLASHBACK SPECIAL

110

8-BIT Brilliance.

We go way back to where it all started. A must-read for C64 gamers!



Heard
about

the

HOT

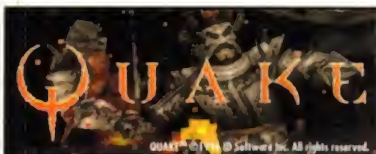
NEW

DEAL

from

DYNALINK

MODEMS



CD GUIDE

It's Payday!

CD Tech

Win 95

Running the Powerplay CD under Win 95 is best. All the games will appear on the menu and run, whether Win 95 or DOS.

CLICK ON THE POWERWIN ICON

DOS

Around half the games are DOS. The Powerplay DOS menu will only show DOS games

TYPE PCPOWER AT THE CD PROMPT (PROBABLY D:)

Win 3.1x

Some games will run under Win3.1x. The Powerplay menu won't work under Win3.1x, so run them straight from the CD with File Manager

RUN STRAIGHT FROM CD

Twinsen's Odyssey

Win95

Adeline/Activision

Windows 95 Adventure/RPG

Just ask the Oracle, Twinsen's first Little Big Adventure (Relentless) was very popular. Now, check out a very eagerly awaited sequel indeed. This time, Esmer aliens from the planet of Zeelich set foot on the planet of Twinsun kidnapping all the magicians and children, the Esmer's sinister plan to destroy the planet becomes apparent. Twinsen is once again called into action to save his planet to defeat the Esmer, and confront their leader, the Dark Monk.

System requirements: Pentium 75, 8Mb RAM, Soundcard

[UP] = Forward

[DOWN] = Backward

[RIGHT] = Turn Right

[LEFT] = Turn Left

[SPACE] = Action corresponding to the current behaviour

*** NORMAL:** Talk / Read / Search / Use

*** SPORTY:** Jump

*** AGGRESSIVE:** Fight

*** DISCREET:** Kneel down to hide

[ALT] = Throw the magic ball or the selected weapon (when you've found it) in any behaviour:

Trajectory will change with the current one.

[X] + [Arrows] = Dodge moves (behavior dependant)

[W] / [Z] / [End] = Quick Access to



Twinsen's Odyssey

Normal Behavior Action

(Talk, Search, Use)

[RETURN] = Recenter screen on Twinsen (In and Out mode)

[CONTROL] = Behaviour menu

[SHIFT] = Inventory

[ESC] = Quit Game (Main Menu)

Terracide

Win95

Eidos Interactive

Windows 95 arcade/action

Terracide is like Decent but yet it's not. It has the same kind of plot - mosey round a 3D inner world with long passageways and large open areas, however Terracide is also a very atmospheric game, encompassing exploration, frenetic combat and puzzle-solving.

The story goes like this, mutated exhumans, having left Earth generations ago, are returning in their gigantic ships to destroy their former home world. You are Earth's only hope, flying the single vessel small enough to penetrate their defences. **System requirements:** Pentium 90 with 3D accelerator, Pentium 150, 16Mb RAM, Soundcard, Direct X 3.0. This game supports a joystick, gamepad and mouse.

This game supports ATI Rage 3D, Virge VX, Power VR, Rendition, Matrox Mystique and the 3Dfx. Impressive range huh?!

[KEY CONTROLS]

Up Arrow = dive

Down Arrow = climb

Left Arrow = turn left

Right Arrow = turn right

A = accelerate

Z = reverse/decelerate

D = roll

Q = fire main weapon (centrally mounted)

C = fire 2nd weapon (right mounted)

X = fire 3rd weapon (left mounted)

F = flare (unlimited, but uses lots of energy)

E = detonate (guided missiles only)

Space = strafe (hold down and press Left, Right, Up or Down)

Delete = strafe left

Page Down = strafe right

Home = strafe up

End = strafe down

(or POV hat on joystick to strafe)

Alt = pause/bring up window menu

1-7 = weapon select (press same key to cycle through all weapons in group)

Shift + 1-7 = select 2nd weapon (right mounted)

Ctrl + 1-7 = select 3rd weapon (left mounted)

You can reconfigure these keys within the game. Press ALT to bring up the menu, select Options, Configure Controls, Configure Keys. Select Configure Mouse/Joystick to set up the mouse or joystick.



Terracide



Wipeout XL

Win95

Psygnosis

Windows 95 Racing/Action

Wipeout 2097, Wipeout XL. They're actually the same thing. Don't ask us why it has 2 different names! Anyway, Wipeout XL is a futuristic racer from Psygnosis. Vehicles hover over the track and have the ability to turn, jump, and pick up weapons. These include missiles, mines, rockets, plasmbolts, electrobolts, thunderbombs, and the dreaded "quake" weapon, which sends a flaming earthquake down the track. Powerups can be collected. These include autopilots, energy E-paks, shields, and turbos. System requirements: Pentium 90 with 3D accelerator, Pentium 133 without, 16Mb RAM, Soundcard, Direct X 3.0 or greater. This game supports a Joystick and Gamepad.

DOS

This game supports Rendition and the 3Dfx.

Cursor keys Left & Right = Steer
Cursor keys Up and Down = nose up & down

S = accelerate

A = air brake left

D = air brake right

SPACE = fire

DOS

Left Alt = drop weapon

F1 = View: external / internal (internal view is not recommended for those prone to motion sickness)

F2 = Mouse sensitivity: 8 settings

F3 = Draw distance: 8 settings (higher settings increase frame rates)

F4 = Engine trails: 3 settings

F5 = Sky: on / off (when off - frame rate increases)

F7 = Bi-linear filtering: on / off (when off - frame rate increases)

All controls are redefinable in this demo. To do this, go into the OPTIONS menu from the main menu. Then select CONTROLLER SETUP. In this screen, use the left and right cursor keys, to select the required controller device. Select the REDEFINE CONTROLLER to alter controls.

Machine Hunter

MGM

Windows 95

Top-Down 3D Shooter

In Machine Hunter, players must destroy enemy robots in order to prevent their destruction of earth.

Win95

Players can move and shoot in every direction, and strafe as in first perspective shooters. After each enemy is destroyed, the player gains the powers of the robot. Special weapons can be collected as well as power-ups. Other special items including portals are also contained within this game. This download offers one level of overhead shoot-em-up action.

System requirements: Pentium 60, 8Mb RAM, soundcard.

This game supports a joystick and gamepad.

The cursor keys provide directional movement for the player.

CTRL = Fire

The numeric keypad provides 8 directional firing for the player.

Y = Fire Up

G = Fire Left

H = Fire Down

J = Fire Right

Space = Fire secondary weapon

W = Select primary weapon

S = Select of secondary weapon

Numeric keypad 0 = Strafe (Rotating view only)

Return = Start button and PAUSE

TAB = 3D Map of the level

ALT-F4 = Quit

ALT-Enter = Full screen.

ALT = Full screen to window.

X-Men:

DOS

Children of the Atom

Acclaim

DOS Arcade Head-to-Head 2D

Fighting

This is your basic street fighter 2D fighting game except now you can be X-Men (and women if the term applies). This demo version allows players to control Wolverine or Psylocke battling it out head-to-head on one machine or play against the computer.

System requirements: 486/66, 8Mb RAM, Soundcard.

This game supports a Joystick and Gamepad.

Player 1:

Start = **F1**

Left = **A**

Right = **D**

Up = **W**

Down = **S**

Punch = **T,Y,U**

Kick = **G,H,J**

Player 2:

Start = **F2**

Left = **Left Arrow**

Right = **Right Arrow**

Up = **Up Arrow**

Down = **Down Arrow**

Punch = **Insert, Home, Page Up**

Up

Kick = **Delete, End, Page Down**

Down

Dogs of War

Win95

Software Engineering inc.

Windows 95 Strategy

In Dogs of War, you can control any of the major combatants of World War II (U.S., U.K., U.S.S.R., Germany, or Japan) or any combination of them with up to 5 human players. The combat and economic models are greatly simplified in Dogs to increase playability offering a fast and fluid challenge. Play is turn-based and up to 5 humans can go head-to-head via the Internet.

System requirements: Pentium, 8Mb RAM, Soundcard.

This game supports a mouse.

Need for Speed II

Win95

Electronic Arts

Windows 95 Supercar sim

With its subtle lines and not-so-subtle V12 powerplant, the Ford GT90 boasts 720 horses and a top speed of over 220 miles per hour. This beauty can seriously satisfy. Well, seriously satisfy in the cyber reaches anyway. Let's face it, where never going to be able to afford one of these, so drive like a maniac in one of these in NFS2. Go ahead, flip a Ferrari!

System requirements: Pentium 90, 16Mb RAM, PCI Video card, soundcard. This game supports a Joystick and Gamepad.

Up = Accelerate

Down = Brake

Left = Steer Left

Right = Steer Right

Baseball Pro '98

Win95

Sierra On-Line

Windows 95 Simulation/Sport

Baseball is gaining popularity here in Australia and isn't that bad at all. FPS Baseball features a full 3D ground with 3D players as well. This demo allows you to practice batting. Check out the very revolutionary way this is carried out as well.

System requirements: Pentium 60, 16Mb RAM, PCI Video card, Soundcard, Direct X 3.0 or greater.

This game supports a Joystick and Gamepad.



FREE

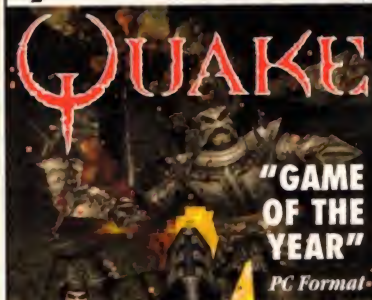
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CD GUIDE

continued...

Art of Flying

Win95

Bluemoon

Windows 95 - Fractal based flight sim

Art of flying is an exclusive from Derek, our UK consultant. This is a very big exclusive, so make sure you look at it!

Betrayal in Antara

Win95

Sierra

Windows 3.1/95 Role Playing Game.

Battle in Antara is quite reminiscent of the 3D RPG's of old. Although this is a 3D world, it plods along unlike the more recent real time 3D ones ala Daggerfall. Still, this is one massive game, within this demo is most of the eastern coast of the land of Antara, which Sierra states is only 5% of the total game area!

System requirements: Pentium 60, 16Mb RAM, PCI video card, soundcard

This game supports a mouse.

Blood

DOS

GT Interactive

DOS - First Person Action

Blood may seem like just another Doom clone, but it isn't. It's actually more like a Hexen clone. It doesn't matter though because it's fun with a lot of humorous effects. Beat a zombie with your pitchfork for example and if you're lucky enough to decapitate it, you can watch the beheaded body spray strawberry jam everywhere. Oh yeah, you can also kick the head around like in soccer.

System requirements: 486/66, 8Mb RAM, Soundcard.

This game supports a joystick, gamepad and mouse.

Up = Forward

Down = Backwards

Left = Left

Right = Right

Spacebar = Use items or open doors

Tab = Toggle automap

F = Toggle map follow mode

Shift = Run

Caps Lock = Auto run

Alt = Strafe

, = Strafe left

. = Strafe right

Ctrl = Fire the selected weapon's primary fire



X = Fire the selected weapon's alternate fire

A = Jump

Z = Crouch

PgUp = Look up

PgDown = Look down

Home = Aim up

End = Aim down

Backspace = Turn around

[or] = Cycle through inventory items

Enter = Use selected inventory item

Carmageddon

SCI

DOS action driving

What can be said about Carmageddon that hasn't already been spread around newspapers in an almost tabloidy fashion. With cries of "too violent" and "it's going to corrupt society", the office of Film and Literature classification had no problem in giving it an MA15+ rating! Like they say, any publicity is good publicity. What makes this game so controversial? Well, you have to drive around in your car causing as much damage to other cars and pedestrians as possible. It's actually a lot of fun!

Give this controversial game a go and tell the wowers where to stick it!

System requirements: Pentium 60, 16Mb RAM, Soundcard.

This game supports a joystick and gamepad.

Accelerate = **Numeric Keypad 8**

Brake = **Numeric Keypad 2**

Turn Left = **Numeric Keypad 4**

Turn Right = **Numeric Keypad 6**

Handbrake = **SPACE BAR**

Repair vehicle = **Backspace Key**

Z = Disable traction (For doing doughnuts)

DOS



System requirements: Pentium 100, 16Mb RAM, Soundcard, Direct X 3.0 and above.

Arrow Up = Move Right Up/Navigate Quick Menus

Arrow Down = Move Kain Down/Navigate Quick Menus

Arrow Left = Move Kain Left/Navigate Quick Menus

Arrow Right = Move Kain Right/Navigate Quick Menus

CTRL = Attack

ALT = Action/Suck Blood

Space = Use prepared spell

F1 = Weapons, Spell and Armour Inventory

F2 = Change Forms (Full Version of Kain only)

F3 = Spell Quick Menu

F4 = Objects Quick Menu

F5 = Camera Zoom In/ZoomOut

F6 = Eagle Eye Map

F7 = Options Screen

F11 = Cycle through the gamma settings (brightness)

F12 = Switch Resolution modes (as available)

ESC = Escape to quit menu

Banzai Bug

Win 95

You're a bug on a mission to get as many as possible. This is a Direct 3D game, so will look good with your 3D accelerator. Good fun.

System requirements: Pentium 90 with 3D accelerator or Pentium 133, 16Mb RAM, Soundcard, Direct X 3.0 and above.

This game supports a joystick and gamepad.

Shoot = **Space or F**

Punch = **Space or F (near target)**

Zap = **Space or F (when have zap)**

Other Action = **Space or F (when indicated)**

Fly Forward = **Shift or D**

Climb = **Up**

Dive = **Down**

Left = **Left**

Right = **Right**

Level Out = **S, or Control**

Win95

Locus

Zombie

DOS Future Sport

Future sport, yep, you guessed it, the game starts something like this. "In the future there is one sport, Locus and the world is engrossed by it. This sport is a cross between auto racing, hockey, and demolition derby.", there's also bound to be some kind of to the death event huh? Future sports games programmers, real optimists huh?

System requirements: 486 DX2/66, 8Mb RAM, Soundcard

This game supports a Joystick and mouse.

This game supports a VR Headset

Mouse controls movement.

Left mouse button fires.

Right mouse button toggles magnet, which allows you to pick up and shoot balls.

Space bar = Jump.

Arrow keys = Control head movement.

c = centers view.

. = pauses.

Tab = toggles a map view, which allows you to view the arena from above.

esc = quits the current level, cancels the current game, and returns you to the user interface.

DOS

Blood Omen: Legacy of Kain

Activision

WIN 95 - Adventure/RPG

Legacy of Kain is a dark and broody Game of revenge - quite different to your average goody two shoes save the world RPG. Basically, you're Kain, slain by a group of treacherous purely evil beings, you manage to come back and wreak vengeance upon them.

Win95

Z.A.R.

Auric Vision

DOS 3D Shooter

The Zone of Artificial Resources contains production factories which manufacture rockets, robots, artificial satellites, and more. An error has occurred within the main computer system which causes the Zone to create malicious robots. The player's goal is to destroy several terminals and as many robots as necessary. Try this game out, it controls like Quake by using the mouse to aim and the cursor keys to move, however everything is set outside on a very nice fractal landscape. Being fractals, you can blow the landscape up as well. Looks great, plays well too!

System requirements: 486 DX100, 8Mb RAM, Soundcard

This game supports a Joystick and mouse.

This game supports a VR headset and Simuleyes glasses.

DOS

Gravity Well

Software Engineering

Windows 95/Windows 3.11 (need win32s for 3.11) Arcade Shooter

Who says you need big fancy graphics and even bigger budgets to make a fun and playable game? We certainly don't. Gravity Well is like the arcade classic Asteroids but with a few twists. Jet around in your fighter/scout craft in search of likely planetary conquests. Successfully landing on an uninhabited planet claims the planet as your own and automatically designates a landing sight for your colony freighters. Inhabited planets may be rendered uninhabited through judicious use of your ship's weaponry. Build bases, colonies, labs, and orbital stations to support and defend your growing empire.

System requirements: Pentium 60, 8Mb RAM, Soundcard

Left Arrow = Rotate Ship to the Left.

Right Arrow = Rotate Ship to the Right.

Up Arrow = Apply forward thrust.

Down Arrow = Fire Gun.

F = Fire Gun.

D = Fire Rocket/Missile.

PgUp = Increase view magnification.

PgDn = Decrease view magnification.

End = Restore default magnification

F1 or Home = View Blue Leader's fighter.

F2 = View Red Leader's fighter.

F3 = View Purple Leader's fighter.

F4 = View Yellow Leader's fighter.

Esc = Refreshes the window.

Pause = Pause the game.

Win95

UTILITIES

ICQ v. 1.112 beta for

Windows 95/NT from

Mirabilis Ltd. Shows you in real time when your friends and colleagues are online.

Use it to easily set up chats, internet conferences and games, or to just hang out online with your pals. This version of ICQ requires that you have Win 32s installed on your machine before you can run ICQ.

Desktop Spy - Desktop Surveillance offers a unique approach to the problem of access control, prevention of, or investigation into the use of computer equipment and software. The program is the software equivalent of a surveillance camera and works by recording desktop activity.

MSNBC News Alert - This handy app gives you instant notification of breaking news without interrupting your work. Personalize MSNBC news topics, technology news from CNET's NEWS.COM, and stock alerts from Microsoft Investor. News Alert monitors the world so you'll always get important news stories, personal stock tracking and sports scores as they happen. News Alert flashes the Alert icon in your toolbar when news breaks. Click the icon to see the headlines. Alerts are optimized for quick delivery at any connection speed.

Fast Return 97 - FastReturn 97 is an innovative system error correction utility. With the program you can continue to work safely with applications and games even after clicking the "This Program Has Performed An Illegal Operation" dialog box shut.

The Right Resume - The Right Resume is a powerful Windows-based job hunting package. With The Right Resume, you can create a chronological, functional, or targeted resume and store information for up to ten employers. The program incorporates a fully functional Wysiwyg word processor for creating cover letters, customizing your resume, or for any other word processing task you require.

Netscape Communicator - Featuring Navigator 4.0, this is Netscape's latest offering.

DOS TROUBLESHOOTING

The most likely cause of any problem is a shortage of conventional memory. This has nothing to do with how much RAM is on your system, but how it's set up. To find out how much is available for the games, type MEM /CIMORE. Look for a line that reads LARGEST EXECUTABLE PROGRAM SIZE, if it's over 550k then everything should run. If it's under that figure, you'll need to edit your system files to sort it out.

The easiest way is to use the MAKE BOOT DISK facility found on most game installation menus. If you'd prefer not to do that, then you'll need to manually edit your two configuration files - the CONFIG.SYS and AUTOEXEC.BAT.

To do so, type EDIT CONFIG.SYS and EDIT AUTOEXEC.BAT. In the CONFIG.SYS file, the most likely culprit is EMM386.EXE. You don't need it for the majority of games, so put REM at the start of the line. This will disable it. In the AUTOEXEC.BAT look to see if you are running SMARTDRV, if it's there, put REM at the start. These two simple measures should overcome most problems. If you're still running short on conventional memory (the game should give you an error message telling you how much more you need), then a boot disk is the best solution.

THE PC POWERPLAY CD - The games on the CD are designed to be run in different ways. Some can be run straight from the disc, while others need to be installed. Games requiring installation will usually prompt you with a choice of where it will install to, so take note! Many of the games which run from the CD will only produce sound effects if you have a Sound Blaster compatible sound card set to default settings. That's 99% of you, so if you get no sound you're best copying the game to your hard drive, then running the setup program - usually INSTALL, SETUP, CONFIG or SOUNDSET. As with all problems PC, trial and error is the only true solution. Feel free to copy an entire game to your hard drive. All games are in the GAMES directory. Also copy a game from the CD if it mysteriously refuses to install. Then run the INSTALL file from the hard drive.

DISCLAIMER - All possible care is taken while selecting, testing and installing the software which is included on the PC PowerPlay CD. Next Publishing accepts no responsibility for data loss or other damage which may occur during its use. If your CD is clearly faulty, send it in for free replacement to:

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NSW 2012

SUPPORT - cdtech@pcpowerplay.next.com.au

Patches

Sidewinder gamepad Drivers to Version 1.5

MDK Direct 3D patch

Jack Nicklaus golf

Outlaws Glide patch for 3Dfx (Voodoo chipsets)

Die Hard Trilogy

Hind for DOS

Hardball V

Virtual Golf

Distributed by:

mindflux

Virtual Quake

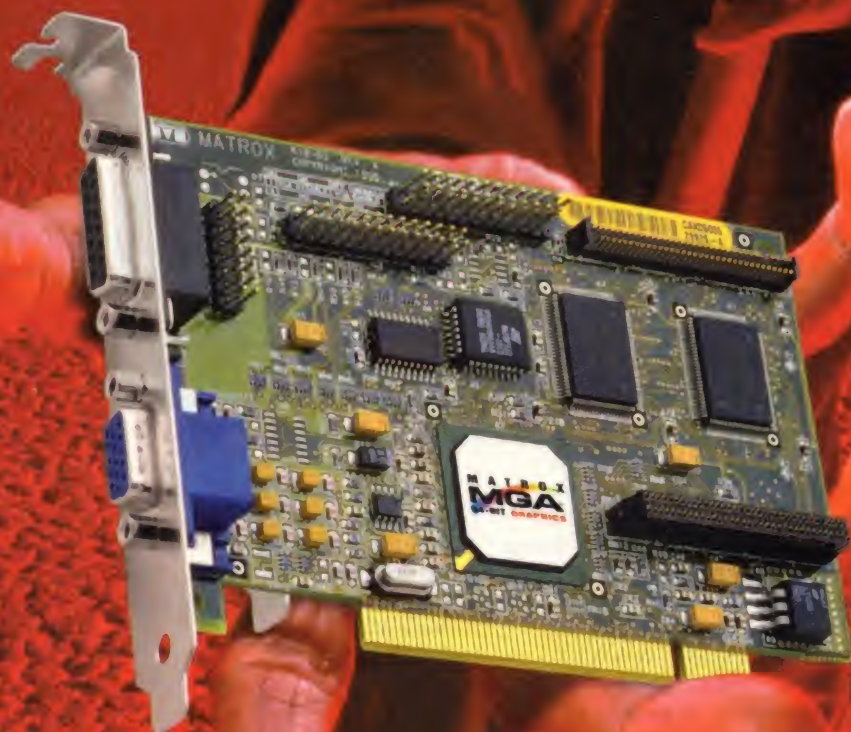
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matrox

How to start a small business in NZ...

In New Zealand, the Censorship Compliance Unit of the Department of Internal Affairs (the equivalent of our OFLC) is getting tough. Real tough. Most games which come into the country are shipped via Australian distributors, which means they come complete with an Australian classification. Now, all games sporting the MA rating or higher (our highest) must be reclassified under the NZ system. Initially this means around 70 titles may be taken off the shelves until they are re-classified. These games include Red Alert, Quake, Command & Conquer and Duke Nukem 3D (a game which has already had major components censored to comply in the first place). However, the process NZ games distributors are being forced to undertake is proving to be a major disincentive, and may result in these games simply being withdrawn from sale permanently.

Greg Priest, the head of NZ's games industry body told PowerPlay he believes that "Nobody in the world can comply with the current guidelines. Among other requests, they want to see every image and hear every sound." In addition, they require a walk-through that takes you to every corridor available. In an average adventure game with 80 hours of

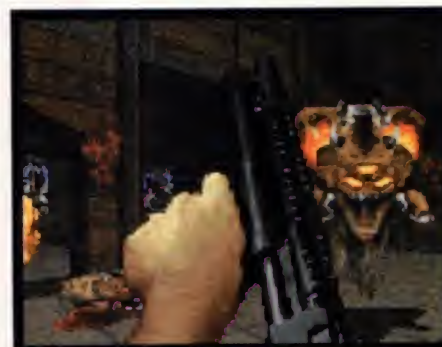
gameplay, a submission would have to be accompanied by videotape footage showing everything. That's 50-60 videotapes for an average game, which of course requires someone (paid employee with better things to do) to actually make these tapes. Next, Internal Affairs must of course watch these tapes. The time this takes is charged to the applicant at the rate of \$1,400 for the first 5 hours and \$100 per hour thereafter. Add it all up and distributors can say goodbye to any money they'd hoped to make out of selling the game, presuming it was actually passed...

Now, here's the really funny part. In addition to this stupidity, an MA15+ re-classification must also include a written description of every file on the game CD. Every one. Every single one. Sunk in yet? An average game CD has hundreds, if not thousands of files. Most have

incomprehensible extensions and functions. Only the game's programmer could provide an accurate description - if they had a couple of weeks to spare to do nothing but compile this list.

On top of all this, there is a waiting list of up to 6-9 months before classification can even begin...

It is obvious to all that this situation is completely unworkable. All but the Dept. Of Internal Affairs, that is.



Withdrawn in NZ until further classification: Quake, Red Alert & Duke Nukem 3D & up to 70 others

The industry body is hoping to meet with the Office of Film and Literature to try and resolve this disaster.

There is still hope, but at this stage it is looking dangerously like NZ gamers will miss out on the best games due to the Pythonesque idiocy of NZ's bureaucracy.

And you thought Australian classification/censorship laws were ridiculous, draconian and ill-considered...

sidelines

Bandai, creators of that evil and insidious disease known as Tamagotchi, aren't content with just making fools out of people gullible enough to believe the hype thus far, and want to expand into the PC games market. In a move that some might be tempted to call a crass money-making exercise, Bandai have teamed up with 7th Level to create what they call 'a unique PC experience', and you can expect it to be on shelves sometime around December this year. In the meantime though, there is a rip off of Tamagotchi out there though, called 'Young Triads', where you have to take care of a young triad member by letting him kill things. We can't wait for the release of the 'Young Triad member kills Tamagotchi repeatedly for no apparent reason' key ring game.

The battle over 3D API's is heating up, with a consortium of games developers sending an open letter to Microsoft pleading for them to actively support the OpenGL API for games on Windows95 and Windows NT. Among those involved with the letter to software giant Microsoft are John Carmack and John Romero, both of id software fame. Carmack calls on Microsoft to release the "Win95 OpenGL MCD framework to allow hardware vendors to easily build robust, full featured drivers". The letter notes that the OpenGL API will be used irrespective of Microsoft's attitude, with games the calibre of Descent III and all the Quake derived games for at least the next year and a half to use the OpenGL standard, though the process would be made much easier were Microsoft to comply.

Star Wars fever hit our shores recently, with the re-release of the trilogy at the cinemas and the release of a couple of impressive games based on the Star Wars universe. Palladium interactive, responsible for the Myst take off 'Pyst' are about to release an unauthorised parody of the Star Wars trilogy called 'Star Warped'. Including mini-games like 'You Don't know Jedi' (You Don't Know Jack meets Yoda), 'Flawed Fighters' (featuring characters like 'No Hand Luke') and the much needed 'Whack the Ewok', it looks as though it might be a fun game for those overdosing on Star Wars fever.



sidelines

Lara Croft, the pointily chested lead character from Tomb Raider has made history in the UK, where she has been featured on the front cover of 'The Face' magazine. Not only that, but she has also been featured in an 8 page 'photo-shoot' inside the fashionable mag acting as a clotheshorse for Gucci, Jean Colonna and Alexander McQueen, along with the requisite accessories like a Kalishnikov and the odd Uzi or two. What's next? A guest spot on Baywatch!? Her and Pammy would have something to talk about, at least - 'How did your plastic surgeon get them so pointy, Lara?'

Just goes to show how much money the computer games industry is worth nowadays, Westwood Studios have built themselves up from a two person garage operation to one of the strongest and best games companies in the world, employing around 120 employees, and have just been recognised by the state of Nevada as their exporter of the year. Also, the US congress has chipped in with a Congressional Certificate Of Achievement for their performance last year. Perhaps it's all the awards ceremonies the staff have been attending, but the Red Alert: Counterstrike fix disk looks like it will be delayed for a little while yet, unfortunately.

Harvey Norman are determined to take their share of the computer game market, by opening around 30 'GameZone' stores within their existing Harvey Norman chain stores. Essentially, it looks like there will be sections within Harvey Norman stores filled with flashing lights and (family oriented) music videos and lots of computer games with price tags on them, described in the press release as a 'post-industrial' environment. There will also be a store within the store for 'mature gamers' where MA15+ games will be housed such as Duke Nukem 3D, Blood, Redneck Rampage, and Phantasmagoria 2 and so on. Note how we didn't mention Carmageddon in that list? Word is that it might not be appearing on the shelves of Harvey Norman, even though it was passed by the OFLC.

The core design team from Shiny Entertainment responsible for the very cool MDK have left the company and are starting up their own as yet unnamed development group. It isn't an acrimonious parting though, because the group will still be a part of the Interplay/Shiny family, and have a multi-product pact with Interplay to publish the software titles they develop. Dave Perry, who will remain with Shiny, is pleased that the group will stay 'in the family', and Interplay representatives have pledged to support the new group 100% with Dave Perry from Shiny saying that he is happy that they are staying with the Interplay/Shiny family



Ultima Hacked Already?

What does a game hacker do when the game wanting to be hacked into hasn't yet been released? He or she hacks into the supposedly secure WWW site instead. Disgruntled at the delay of the beta test for Ultima Online, a member of one of the many hundred UO player guilds (much like Quake Clans) bypassed web security and altered some of the familiar sights and sounds at the official UO web page <http://www.owo.com>.

Replacing the UO logo with a graphic of Lord British's (aka Richard Garriott - founder of Origin Systems Inc.) head on a stake, changing the UO midi files to wav's and midi's of the Simpsons and Beavis and Butthead, and leaving the message "PODW (Pirates of Dark Water) was here" scrawled in blood, this seemingly harmless prank may cost Origin some piece of mind. Regarding the issue of online gaming security, this stunt has revealed a chink in Origin's very expensive armour that has many of its testers ill at ease.

Responding quickly, Origin spokesperson Teresa Potts claims that it was not a conventional hack, just a creative way of manipulating the player guild registration function there. Although no sensitive data was accessed, Origin are still treating this matter very seriously and are "considering their options". The hacker himself released an official statement claiming Origin's policy of keeping the paid beta testers in the dark re the commencement of the test as the primary reason for the tampering and apologized. He then went further to ask Origin to apologize to all the beta testers for the lack of communication (one official email was sent to testers in February regarding the games delay). Origin were quick to reply, as five days later (and time of press), they announced that the beta CD's were in the mail! Full report next issue.

SGI merchandising.

We've been praying for it for ages. The entire free world has been praying for it for ages, in fact, and now it's finally happened. Yes! No longer do you have to pay insane prices for clothes and merchandise from sports shoe manufacturers in a desperate attempt to look cool and hip. SGI have finally given in to popular demand and released lots of stuff with their name on it. Yes folks, this means you can now purchase shirts, jumpers, mugs and even babywear with the oh so cool SGI label on it. Forget the swoosh, or a t-shirt emblazoned with the latest anti-establishment rock band catchphrase, this is destined to become the fashion item for the year, or even the decade. Choose from items such as the SGI drink bottle (just your average drink bottle, but it has an SGI logo on it! Oh yes), or maybe an SGI stuffed plush teddy bear for the little budding programmer you've got in the crib. And there's no need to stop there either - SGI know their target audience, and they've thoughtfully included some SGI nappies as well! Or perhaps a gold SGI slinky, for endless hours of fun on the fire escape stairs. Then there's four or five varieties of SGI keyrings, some with a real piece of circuit board, others finished in satin chrome over solid brass (just what you've always wanted from a keyring), and one even with removable post-it notes built in to them. There's heaps of other necessities included as well, like watches (one comes with its very own tin!) and clocks, paperweights and more!

SGI have thought of everything. We're absolutely sure that SGI merchandise is going to sweep the world, and it's only a matter of time before the first newspaper reports start coming in about kids mugging each other for SGI emblazoned clothes. Get yours from www.sgi.com, and be the coolest person on your street now!



Top Ten Games

Rank TITLE
Developer / Distributor

This	Last Month	
1	1	X Wing v Tie Fighter Lucas Arts / Metro Games
2	2	Need For Speed 2 EA / EA
3	4	C&C Anniversary Edition Westwood (VIE) / Sega Ozisoft
4	3	Interstate '76 Activision / Roadshow
5	-	Redneck Rampage Interplay / Electronic Arts
6	11	Flight Sim 6 (Fly Aust) Microsoft / Various
7	6	Outlaws Lucas Arts / Metro Games
8	7	Diablo Blizzard / Dataflow
9	5	Tomb Raider Eidos / Sega Ozisoft
10	20	Counter Strike C&C Westwood (VIE) / Sega Ozisoft

Week ending 7th May 1997.
The Acer best selling charts are carefully compiled from a sample panel of retailers selected across Australia including mass merchants, department stores, specialty software stores and independent outlets. Retailers surveyed include Myer Grace Bros., David Jones and John Martins, K Mart, Target, Big W, World 4 Kids, Harvey Norman Computer Super Stores, Blackbuster, Brashers, Video Games Heaven, and Games Wizards.

Charts supplied to Australian Computer & Communications Bureau

ACER



Come and get some, baby

Here's something you will need. You may have to not pay the electric bill or maybe even forgo the baby's food, but you will need it. Coming to you this fall will be the collectable Duke Nukem. Yep, GT Interactive has commissioned Moore Creations to strike a limited edition handpainted porcelain Duke Nukem figurine. There's no word on how much the collectible is going to cost, but Moore Creations has a history of successful figures including Dale Keown's Pitt, Frazetta's Princess, Chaos! Comics' Lady Death and Top Cow's Witchblade.



No longer Virgin

As you may remember reading in previous news columns here, there is an ominous air circulating around Virgin Interactive. Parent company Viacom has made it no secret they want to sell the game publisher in the wake of Viacom's poor financial performance that it tries to blame on its divisions (MTV, Block Buster Video, Paramount). Now comes word that two high ranking VIE executives have jumped ship and are now on the payroll of Electronic Arts. Neil Young was VP of product development: now he is vice president and general manager of Origin. Chris Yates, VIE's VP of technology and development, will become Origin's vice president and chief technology officer. With all this turmoil at VIE, I hope it doesn't interfere with VIE's development of the Ultima online game. As we speak,



Raptor this!

Fight! Fight! Yes indeed, it could shape up to be quite a nasty little dog fight over which game publisher, IMagic or Nova Logic, has the rights to the F-22 Raptor stealth fighter name and likeness. Lockheed Martin, the US defense contractor, says it is taking all the steps it can in order to protect its' stealth fighter's name and likeness, which hasn't even entered service yet!

There is a big problem with all this though. F-22 and Raptor are public domain names because the government owns them, which is the case with all government aircraft. So just what does Lockheed Martin own, if anything? Lockheed spokesman Jeff Rhodes says, "That's a gray area, who actually owns what... It's a great, dismal swamp." But that hasn't deterred Lockheed Martin, who's F-22 Raptor is slated to replace the US government's aging F-15 fighter fleet. Lockheed sent both Nova Logic and IMagic threatening letters warning them not to use the Raptor's name or likeness. In response to Lockheed's letter, Nova Logic's president John Garcia got on the horn to the Raptor's developer, Skunk Works—a super secret Lockheed subsidiary—and asked for the licensing rights. Already, Nova Logic has a F-22 Raptor update for its' very popular F-22 Lightning II flight combat sim and will release a full-blown sim this fall. Nova Logic contends it already owns the Raptor trademark. In a statement issued via their Web site, Nova Logic says, "...it (sic) has therefore asked Interactive Magic ("IM") not to infringe upon NovaLogic's trademark rights in its F-22 Raptor product. NovaLogic's thinks IM's use of the name "iF-22 Raptor" is likely to confuse the trade and public and has asked IM to rename its product and avoid confusingly similar logos and packaging. NovaLogic believes that IM has no more right to sell a product called "iF-22 Raptor" than it does to sell "iCoca Cola".

IMagic's Wild Bill Stealey says that Nova Logic doesn't own the trademarks because they are in public domain, and secondly, that he believes such a move sets a bad precedent, by allowing one company to own public domain names and likenesses. Privately, Wild Bill is mad as hell, especially since all this has come up just before IMagic's launch of iF-22 Raptor early this summer. This controversy is building up a head of steam among the powerful flight sim enthusiasts as well. The Internet is filling up with comments from flight simmers who believe that by allowing this type of trademarking that will give game publishers who win the trademark rights the green light to hike software prices. And heaven forbid, what happens if the trademark company can't design a good game (shades of latter day SSI with the TSR license)?

Next move will be up to Nova Logic. Will they go to court to get an injunction against IMagic? Also, what will happen to the other two Raptor sims slated for release this year? One is from DiD, who designed the highly acclaimed EF2000 for Ocean.



IMagic's Wild Bill Stealey



Ultima Online is slated to be in beta testing.

Sierra jumps on Half Life

Sierra Online has snagged the publishing rights to Half-Life, one of the first licensed games to use id's Quake engine. Valve is the designer and they promise that Half-Life will be a step forward in the gaming experience. Valve says that gamers will be blasting away as in Quake, but the gameplay includes strategy elements as well. Valve says in this game it won't be just humans versus monsters, that sometimes you'll have to figure out who you're supposed to shoot. The game is due out this fall.

Just who is Valve? Valve includes: 3D artist Chuck Jones, formerly with Apogee/3D Realms, where he was an artist and animator for Duke Nukem 3D, Rise of the Triad, Shadow Warrior and the Duke Nukem Plutonium Pack; game and level designer Harry Teasley, former art director of Williams' Doom for Sony Playstation; Tools Architect Ben Morris, creator of the Doom Construction Kit and WorldCraft; game designers Steve Bond and John Guthrie, creators of the Quake Airplane and Quake Kart; and level designer Dario Casali, one of the world's best-known deathmatch level designers, including those found on id Software's Final Doom.



For Ben's complete report on

the Electronic Entertainment

Expo held recently in Atlanta,

Georgia, turn to page 22

Hi ya all from the UK where everyone in the computer industry has packed their bags and gone off to Atlanta for the E3 show. This month most companies try to keep all their new items a secret for the show, but I have managed to bribe some developers for some inside news.

Hello goodbye hello

Peter Molynux, the guy who made Bullfrog what it is today has finally upped and left. He is now starting up a new development team called Lion Heart and the question I want to know is, if you partly own and run your own development team, make the final decisions and have total input, why do you start up again? Must have something to do with money, me thinks! Bullfrog went through EA and by all accounts the nucleus of the team will continue on, with only a few people leaving to work with Peter. The irony is that EA are fancied to be the publisher/distributor for the new team but do not rule out Eidos!

Blow Jobby!

Yes, Sensible, famous for games such as Cannon Fodder, Mega-lo-Mania and Sensible World of Soccer, have also had two of their core team leave to start up a new team called Abstract. The essence is to bring back good old solid gameplay and their first product is called Joe Blow, a 3D platform arcade adventure game that looks very appetising.

Good old Day

If you were a fan of the Atari/Apple game which was also on the Commodore 64 then, you will be glad to know that Hasbro are working on a 90s version of the game and I shall keep you updated when I get more info. Hasbro are also nearing completion of a game called BeastWars, which is based on the American TV series that is the follow on to



Earthworm Jim 3D

Reasons to be cheerful part 2

All of a sudden it does appear to be the fashion for 3 or 4 personnel to leave 1 development team and start up their own. One new developer which boasts of ex-DMA (Lemmings) personnel is a team called VIS and I spoke to their MD, Chris van der Kuyl, about their direction and ideas. Already they have 2 games lined up. One is the Shiny game Earthworm Jim 3D for both the PC and Playstation and a sports battle game called H.E.D.Z.

"We have tried to create a team which is well balanced, this includes individuals with over 10 years games industry experience and people with as diverse backgrounds as Television Production and Commercial Digital Signal Processing. This really brings a unique slant to the creative design of our games and also to the technical solutions we develop. The one thing that is common throughout the company is the enthusiasm for games, everyone here, no matter what their background, is a games fanatic and that's something you cannot buy."



Simply the Best

"Our team is made up of dedicated and committed professionals who are some of the best talent the industry has to offer. Our games design experience goes back to the C64 era and encompasses at least 10 published games titles. We are however a new developer, and as such have it all to prove, I think it will become apparent to anyone who comes to see our work in the next few months that we are about to prove it. We have such a well balanced and expert team that I would be confident in tackling any genre of game with the exception of Flight Sims, but give me a few weeks because I hear that there are 400 aircraft designers looking for a job over in Prestwick Airport."

Game on

"H.E.D.Z., our new Hasbro title. I wouldn't describe it as a sports game, it is a 3D combat game like you have never experienced. I will expand on the rest of this after the launch at E3."

"Interplay provided us with a few ideas, but it was clear from the start that it is our game design and we have complete control over design issues with Interplay holding final approval. We have complete freedom to design all aspects of the game but we respect the work done by Shiny on the original so we try and stay true to all the core concepts of the game. Interplay are the commissioning publisher and as such have final sign off on all aspects of the game."

Game End

"Jim is a fully free roaming 3D game with seamless transitions between all sections of gameplay. It is much more akin to Mario than Crash or Nights for example. It is not however a Mario clone and certainly pushes the boundaries of full 3D gaming."



At E3 Jim 3D looked primitive graphically, but the gameplay was as hilarious & original as the previous Jim games



Transformers. The game is pitched at the older end of the market and is a beat-em-up with some strategy!

Looking Good.

Grand Prix 2 from Microprose is regarded as the best racing come sim game around, but Eidos are pulling the stops out to ensure their own racing game called McLaren F1 is the business and with its photo realistic graphics and input from the car manufacturers themselves this is looking very tasty. It is billed as a full sim, so all the tuning up of the cars and real stats could make GP2 look dated when it is out!



With McLaren F1, together with Psygnosis' F198 & Ubisoft's yet un-named sim - it's the last hurrah for GP2

Well that's all folks, hope you are enjoying the cricket!

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DARK REIGN

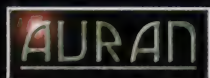
DECLARES WAR ON THE ACT

Units	Dark Reign	Red Alert	Command & Conquer	WarCraft II
Number of Units	36	35	25	33
Unit Morphing	Yes	No	No	No
Units Have Ammo	Yes	Yes	Yes	No
Veteran Units	Yes	No	No	No
Decoy Units	Yes	No	No	No

Base Management	Dark Reign	Red Alert	Command & Conquer	WarCraft II
Number of Buildings	34	28	22	32
Decoy Buildings	Yes	Yes	No	No
Number of Resources	2	2	1	3

Missions	Dark Reign	Red Alert	Command & Conquer	WarCraft II
Number of Missions	33	41	30	28
Training Missions	Yes	No	No	No

Combat	Dark Reign	Red Alert	Command & Conquer	WarCraft II
Real Elevation	Yes	No	No	No
Real Line-Of-Sight	Yes	No	No	No
Terrain Affects Movement	Yes	Yes	No	No
Fog of War	Yes	No	No	Yes
User Definable AI	Yes	No	No	No
Ability to Steal Enemy Technology	Yes	No	No	No
Terrain Overlays Provide Unit Cover	Yes	No	No	No
Destruction of Overlays	Yes	Limited	Limited	Yes



AVAILABLE

Activision is a registered trademark and Dark Reign: The Future of War is a trademark of Activision, Inc. ©1997

REIGN

ON STRATEGY BESTSELLERS

Movement	Dark Reign	Red Alert	Command & Conquer	WarCraft II
Underground Unit Travel	Yes	No	No	No
Formation Moves	Yes	Yes	No	No
Waypoints	Yes	Yes	No	Yes
Number of Waypoints	Unlimited	Unlimited	0	2
Complex Waypoints	Yes	No	No	No
Maximum Number of Units in a Group	All	All	All	9
Mobile Bases	Yes	No	No	No

Options	Dark Reign	Red Alert	Command & Conquer	WarCraft II
Maximum Number of Players	8	8	4	8
Play Both Sides of the Same Map	Yes	No	No	No
Map Editor	Yes	Yes	No	Yes
Mission Construction Kit	Yes	No	No	No
Native Internet Play	Yes	Yes	No	No
Give Units to Other Players in Multiplayer	Yes	No	No	No
Share Resources with Other Players in Multiplayer	Yes	No	No	No
Share Intelligence with Other Players in Multiplayer	Yes	Limited	No	No
Share Unit Control with Other Players in Multiplayer	Yes	No	No	No

Map Environment	Dark Reign	Red Alert	Command & Conquer	WarCraft II
SVGA (640 x 480)	Yes	Yes	No	Yes
Maximum Map Size (in tiles)	256 x 256+	96 x 96	62 x 62	128 x 128
Allow Rectangular Maps	Yes	Yes	Yes	No
Tile Sets	6	3	2	3

SEPTEMBER

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COMPETITIONS

Write the answer, along with your name and address on the back of an envelope.

All entries close August 27 1997

Entries to:

PC PowerPlay

Reply Paid 636, 78 Denwick St.
Strawberry Hills NSW 2032

Twinsen's Odyssey

Issue # 13 winners: CONGRATULATIONS!

INTERSTATE '76

E Keenahan, Figtree NSW.
C Morgan, Karalee QLD.
S Hedges, Salisbury Nth SA.
B Johns, Alexandra Hills QLD.
R Kerr, Wannlassa ACT.
N George, Newnham TAS.

ZOMBIE WARS

C Foong, Darwin NT.
B Smith, Nth Melbourne VIC.
S Heron, Salisbury Downs SA.
N George Newnham TAS.
J Banks, Newtown TAS.
S Van Wissen, Mentone VIC.
E Tomaind, Wangaratta VIC.
S Nuss, Clear Mt QLD.
A Smith, Woodlands WA.
D Brook, Pt Willunga SA.

LAST EXPRESS

A Tan, Winthrop WA.
J McCall, Seymour VIC.
L Burchell, Bendigo VIC.
N Parkin, Col Light Gardens SA.
A Culican, Bossley Park NSW.
J Cooke, Kalgoorlie WA.

NEED FOR SPEED 2

N Driver, Eight Mile Plains QLD.
D Rouse, Waterford West QLD.
R Horne, Ruse NSW.
G Rowse Happy Valley SA.
A Pound, Kelmscott WA.
T Radbone, Aldinga Beach SA.

DOG DAY

D Cauchi, Mt Gambier SA.
L Tam, Tarragindi QLD.
R Butler, Bugaldre NSW.
B Dorff, Bonnet Bay NSW.
R Taylor, Liverpool NSW. P & V
Plummer, Molesworth TAS.
G Boussios, Coober Pedy SA.
T Boyle, Victoria Point QLD.
A Culican, Bossley Park NSW.
W Neal, Umina NSW.
C Wood, Killarney Vale NSW.
B Holland, Rosanna VIC.
P Durkin, Blayney NSW.
W Bishop, West Brunswick VIC.
M Ferguson, Bunbury WA.
J Kautto, Adamstown NSW.
S Nuss, Clear Mt QLD.
C Butler, Keiraville NSW.
A Kenyon, Salisbury Nth SA.
J Nigro, Strathfield NSW.

Multiplay

Last month we told you about Multiplay, the major Australian online games network. They're a fantastic games site in their own right, and with their signing with the massive U.S. games server T.E.N., will be hard to beat on the local scene.

Try it out for yourself. We've got six 30 day trial day memberships to give away.

Q. What does T.E.N. stand for?

Directsoft MegaMedia packs

Compilation packs of games past their use-by date are a dime a dozen. They're usually pretty crappy too, so imagine our surprise when these two packs from Directsoft hit our desks. They actually have good games in them! Naturally enough you we set about organising a competition for these choice goodies... And here it is! We've got six of each to give away.

Directsoft MegaMedia pack 6 -
\$79.95 RRP.

Magic Carpet 2
Chaos Overlords
Comanche CD
Actua Soccer
Fantasy General
Terra Nova: Strike Force Centauri

Directsoft MegaMedia pack 7 -
\$89.95 RRP.

Caesar 2
Road Rash
Cyberstorm
3D Pinball Creepnight
Creature Shock
US Navy Fighters
Heroes of Might and Magic
Gene Wars
Earthworm Jim
A10 Cuba

Not bad eh? Now, just answer this question correctly and you're in for the draw.

Q. Who are the publishers behind each of the games in MegaMedia pack 7? (Hint: It's not Directsoft... Sierra, for example, are the publishers of Caesar II)



T.E.N. Multiplay

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Q. What was the game called that Twinsen's Odyssey is the sequel to?

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Diablo, Lord of all Evil – Steve, Mick, Dave."**



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X-Wing vs. TIE Fighter

LARRY HOLLAND

Master of the Space Sim

X-Wing versus Tie Fighter is flying off the shelves, but is it good or evil?

For the first time anywhere, game designer Larry Holland has his say on what everybody else is saying.



Coming off a serious bout of the flu, game creator Larry Holland was ready to sit down and talk about his new game with Steven Dale Greenlee. He seemed anxious to talk about the game, which has generated a dearth of opinion spanning from the very negative to the very positive. Holland was the force behind two other LucasArts smash hits X-Wing and Tie Fighter. Yes, Holland's Totally Games company has the burden of creating the space combat simulations using the high profile Star Wars license, but Holland says Totally Games means totally immersive and totally fun and he believes that is exactly what gamers get with the ground-breaking multiplayer game X-Wing versus Tie Fighter.

How does it feel to be on the third game of the trilogy you started years ago?

I haven't described it as the 'third of the trilogy.' That implies that it is a series or linked, but it's exciting in the sense that of X-Wing versus Tie Fighter, it has allowed us to definitely explore something different with the whole Star Wars arena, Star Wars theme, Star Wars epic, so it's been real exciting. Whenever you boot up X-Wing versus Tie Fighter for the first time, you get this little message saying that it is not just a port of the old games into a new one. It mentions that this was a whole new game. In what manner is it a whole new game?

Well, certainly it's a whole new game because obviously it's our first effort in the multiplayer aspect of it, where we try to blend the Rebel theme and the Imperial theme together in the same game. The previous two games took one

approach or one perspective and delivered that, where this one tries to blend the two of them together... the whole multiplayer aspect of it. Every element of what we present has gone through significant changes, significant enhancements, significant upgrades, you know from the graphics, the sound, the music, the whole gameplay; the missions, the AI... across the board. So, that's why I tend not to call it a port.

It's kind of funny, in the past when people have been giving us some direction or advice of what they'd like to see next from us concerning X-Wing, they've always sort of described it, '...well, could you sort of do this patch to make it multiplayer?' And, in some ways we found that somewhat humorous because from the stand point of multiplayer, it's not a simple patch. Both from the technology standpoint of actually making it work over a LAN or certainly over the Internet, but the game design issues of creating an experience that is different than say from a Deathmatch like in Quake or Doom where you basically put people into an arena and they shoot it out, but actually put it into a context of a Rebel versus Imperial battle. That sort of game design issues are quite complex and balancing that, making all the craft - because people are flying different kinds of craft and doing of different kinds things - balancing that out to a fun experience from what ever point of view you fly is quite challenging.

Was there anything specifically you learned from doing X-Wing and then Tie Fighter that you put into X-Wing versus Tie Fighter?

Oh, certainly. It's all very evolutionary. You know X-Wing versus

Tie Fighter could not have happened without both X-Wing and Tie Fighter, since they are built upon an actual programming code foundation and knowledge or an experience that it would have been sort of impossible, you know. Each step along that path allowed us to create more complex and interwoven missions, you know, to have a lot more going on inside the missions, to actually choreograph a story inside the mission, you know, all that relied upon the predecessors, so in a sense it is...you know it is upgraded and enhanced significantly, but it required the original foundation to do it.

Do you feel that you are under greater amounts of scrutiny because you are doing a Star Wars title than say if it was just a space adepts fighting game?

Certainly. Yeah, I think because it's Star Wars and because of the previous products, people have created an immense amount of specific expectations. So, I think that has created a very hyped sense of pressure, of what they would like and what the product is, so certainly... in fact Star Wars is not just a license and the most successful film, but I think everyone feels it's such a big part of them, themselves, their psyche and people grew up with it. You know, you hear stories about people seeing it 25, 50, a 100 times... I mean you see a movie like that it really sinks in, you know, beyond the sort of intellectual level in many different ways. So I think, yeah, certainly that creates a whole different expectation that people bring to our products.

Where you taken off-guard by some of the early criticisms of X-Wing versus Tie Fighter, some of

what still floating around out there? For instance, one reviewer said that he was disappointed there were no cut scenes?

Yeah, it is, you know, of course, we're all human beings and when we create these things we make the best decisions we think for the product we're trying to create and it is, because we're human, hard and we aren't saying we aren't affected by the public because we want to listen to the public, we want to hear what they enjoy and what they don't enjoy about it, but it has been one of the most stressful launches of a product in my career. From that standpoint because of expectations and peoples' free flowing responses and in some ways by some people, most extreme and negative, you know, it's been disappointing to hear that. Now certainly they are coming from an honest standpoint, so it's not something like we totally disregard, but it certainly affects us. We've had some unbelievably positive stuff and we've had some stuff that's been unbelievably strongly negative. You know, I believe a lot of that comes from that expectation and looking at the product for they wanted as opposed of what we were trying to achieve. I have talked to some people about... our focus on the product was to really offer up something new in multiplayer play and we wanted to focus on that and put a lot of our energy into doing some things that actually branched out from the tried and true Deathmatch melee type of missions [where] you basically put a bunch of people into a arena and the shoot it out and there are some variations of that, and that's not putting those games down at all, like Doom and Quake and such... Duke Nukem... they're great games, but we wanted to put multiplayer missions into a context

of Rebel versus Imperial and that really required us to do some really new, challenging and different kinds of things, and I think over time people will recognize what we actually gave them. It's basically a learning process, you know. I think what people wanted was they wanted multiplayer, but they wanted all of X-Wing and all of Tie Fighter [in] there as well, all the story and all the cut scenes and frankly we could have done that, but we might have been six months, twelve months, eighteen months down the road before they would have gotten the product, so...

If you could put it as specifically as we lay people can understand, what was the single hardest thing you had to overcome in designing X-Wing versus Tie Fighter?

Well, there are probably two things. One of them was technical and that was the Internet. It's been talked about, hyped and used as far as the holy grail for the future in a lot different ways, but certainly for multiplayer gaming, but it's certainly at its infant stage of capability and of reliability and a lot of things, so it's not really a medium in which as a game developer who's trying build upon a platform in which to communicate information to different people around the world, it's completely unreliable or inconsistent. You never know what you're going to get with that connection because it's all based upon peoples' phone lines in their houses and their connections from the phone line in the wiring in their house to their ISP and how that ISP is connected to the major arteries, or what we call the backbones, that are the main super highways of the Internet and often times those super highways are more like traffic jams in various locales. As we all talk about it, people are becoming familiar with the term latency, which is really to say, the delay of communication between point A to point B and the fact is that there's only a certain amount of information that can go back and forth between two locations and that's the bandwidth limitation. But there's a third extremely common limitation and that is that the connection and if we're playing on the connection [like] we are now talking on, [one] that is filled with static and stuff, that would create a lot dropped packets. That means a significant portion of the information you're trying to communicate is actually just get-

ting lost, just disappearing. So, you tie those three problems together you've got a really difficult and unreliable medium which to fit in a high action simulation that is trying to communicate, in fractions of a second, a lot of information. So conquering that problem... you know, you don't fully conquer it, you do the best you can, [that] was certainly the significant sort of technological challenge. You might have to talk about other companies about this. It might not be news, but it truly is an education process for the public that the Internet, I mean, we all talk about the World Wide Wait, to euphemistically describe the World Wide Web and with that World Wide Wait means for an action game is that the game stops working or has some real significant problems. I think some people really understand, but for others it's quite some education. So, on the technology side that was the major stumbling block.

And on the gameplay side, it's sort of reiterating of what I was saying before, creating game for 8 players where they really have these teams, some people are on the Rebel side and some are on the Imperial evil empire side, and they're flying different types of craft that have different types of capability and they're trying to achieve different objectives in the mission.

We use the term 'asymmetrical', meaning that it's not even or the same and from the game design standpoint that's a very complicated thing to ensure that you're doing different things and have different kinds of capabilities, so that one person or one side is not always the victor and that was a very... you know within the game system you can pick any one of those 8 roles to play, both by yourself or any combination of players playing together, to get all that mix of variables to work it gets somewhat astronomical as far as combinations goes to make a really satisfying game experience for all those situations. That was a real learning challenge.

If we could change gears for a moment or two, I was reading today on the World Wide Wait about a growing idea that game producers are approaching or at least on the road to approaching the same status as movie producers. Would you say that was correct?

Umm, I've heard that sort of



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"Doom and Quake and Duke Nukem, they're great games, but we wanted to put multi-player missions into a context of Rebel versus Imperial and that really required us to do some really new, challenging and with different kinds of things. I think over time people will recognize what we actually gave them."

analogy before and I would agree with it from the standpoint of not in the product we're actually creating, but in some of the methods we're using, some of the complexities of the process, some of the scale, although the money is probably not on par with some the blockbuster movies. You know Jurassic: Lost World was, I don't know, like \$75-\$80 million or something like that to make, I mean we're not in the economic stratosphere quite yet (laugh). Now the planning process, production, pre-production and post production - there are a lot of similarities and the specialization of tasks and such that definitely require the same sort of things that the movie industry is doing.

One of the other aspects of this is, for instance, is that I'm here talking to you instead of the programmer, and also, whoever talks to the voice talent in a game these days? So, in some ways you are the star?

(laughs) Yeah, I guess. Certainly all this is a team effort and probably a team effort that is less stratified than the movie industry is, where you've got the actors and actresses who are the stars, and you know a lot of the behind the scenes work is not much noticed, although in special effects movies the special effects people are the stars or in some movies the director is the star. But, I think at least internally the team is not, at least in our team, is not stratified into some hierarchy where there's a couple of stars or one star and everyone else is laid out in some hierarchy. But yeah, there are a lot of analogies to the movie industry



Tie fighter cockpit

but, you know, it doesn't carry all the way through. It is a completely different type of product, end product. Although some of our products try to tell a story the way cinema is the great story telling medium, mostly it's about interactive experience where you can become totally involved in [it]. It's a different type of product. Some of the people, there's cross-over people, I think, from the Hollywood side of entertainment into computer games, but probably there hasn't been too many go the other way.

As you mentioned earlier about the Internet, do you feel you were forced to include Internet capabilities unnecessarily?

I wouldn't say we were forced to unnecessarily, I think that it was - uncertain as to the size, but they were certainly a very vocal group and certainly a minority of people - when multiplayer is mentioned Internet follows closely behind, so we really did not have much choice about including it or not including it. When we first started the project about a year and a little bit ago, we weren't planning having our original release having Internet and had a change based upon the course of events since then. So, in sense the marketplace really decided it for us and demanded it, if you will, but we felt that we had to. Whether that's fair or unfair or undue pressure or not, I mean you have to basically respond to what your customers want.

But do you think you could have made a better game if you had not included all the necessary code for the Internet play?

No, I don't think we actually compromised the game. In fact, our fundamental approach on how we did the technology for the multiplayer really shines in 8 player LAN and the rest of the game wasn't really... I mean many of the same things we had to deal with the Internet had to deal with some degree with the other methods or technologies in which we were using for multiplayer, so it {Internet} was the more difficult and we might have been able to release

several months earlier if we hadn't included Internet, but I don't think it would have fundamentally changed the product and what it contained if we had left the Internet out. I think it had to be done.

And you're still tweaking Internet play as we speak?

Yeah, it will be an ongoing thing. It's the only approach you can do, I mean the Internet is an evolving - almost an organism, software has to almost evolve with it. And of course as you gain experience in how to solve the incredibly complicated problems you learn even how to approach them. Let me give you an example. You know I talked about latency before - that's basically the lag or the time it takes for a message to get from your computer to another person's computer that you're going to get back again. That is measured in milliseconds, which is thousandths of a second and typical latency is 500 milliseconds, 300 milliseconds; it's up there about a half a second, a third of a second. In an action game that can translate into a really incredible lag of time because if you are in a craft that is flying at 200 or 250 miles per hour and there is a lag of a half second in communication, that translates into several hundred feet of movement of that craft. If you've got a player in New York and a player in Los Angeles playing against each other and they have this latency lag between them and if they are trying to see each other, but there's a half second lag, that actually means a 200 foot potential error in where that person really is, versus where you think that person is based upon your view of him, and that just creates this weird world, especially in a simulation which is attempting to do that [world] in finite detail. That's one of the definitions of simulation, trying to accurately portray a world in a consistent way that having all this weird lagging going on creates some real problems (laughs). The term we use is warping. Where craft move around weirdly because it's trying to compensate for the fact that we don't have any communication.

I guess if we can think of it in these terms: we're sitting in an X-Wing, we're full throttle so somewhere in the code it's estimating our speed as opposed to what our opponents speed is and then not only that, you can do a complete 360 degree turn



Tie fighter cockpit

or less and all sorts of things, so if you're trying to do this with a latency problem then the game is going glitch, isn't it?

Yeah. I mean if you think that as a pilot one of things you're trying to do is something unexpectedly and try to fool what your opponent thinks you're going to do. Well, the best system to try to cope with this lag is try to predict what that player is going to do based upon what he just did, but if he's trying to act unpredictably it's impossible for all practical purposes to predict where he's going to be, so that you will be able to show or portray him in the screen where he will be because of the lag. The whole concept of time in a simulation gets all pretty weird and wild. One of the things I'm most proud of in most cases [that] has gone pretty much unnoticed amongst all the discussions about cut scenes, story and this sort of stuff, is that (and certainly will be more visible in our [new] Internet enhancement) the continuity between our single and multiplayer missions is exact in that they're full and robust and there's a lot of stuff going on. I mean there's literally tens and tens of craft out there and hundreds of objects and a lot of things happening. They all have to be tracked and monitored with the accuracy of a simulation, and actually the prediction model that's being used to determine where those things are going to be is extremely precise, particularly on the craft that are not piloted by a human player that the prediction of where those craft are going to be is extremely accurate and is as well done as anybody out there, because actually most multiplayer games can't do it well. They don't have vehicles, craft, people that are not controlled by human players. The number of participants of objects in the world is directly proportionate to the number of players in the game because it's hard for them to have other craft out there because they won't be able to predict them well. What our system allows is actually a full and rich environment out there where that predic-

tion is actually extremely accurate - it probably works 95% of the time.

As you mentioned earlier, you get nearly flawless performance out of a LAN system? Which brings up the question, do you believe that the future of gaming, of your type of gaming - which X-Wing versus Tie Fighter really is the first of its kind in many senses - is not on the Internet, but on LANs?

Yeah, yeah. I think it allows not only more players, which is more interesting, but it does minimize a lot of these problems that the Internet is currently trying to cope with. You know with the LAN we are more able to deal with game design issues than technical issues. I swing back and forth as to whether I enjoy using the Web at all, because it's way too slow for me and already there are millions upon millions of people using it. As they continue to get overloaded and bogged down there will be tremendous opportunity for the cable modem companies to get their act together, ADSL to get it together, or wireless communication happen such that high bandwidth can be delivered to the

home. I mean I see that is going to happen and then we'll have the equivalent or very equivalent type of performance to the home that a local area network can offer.

I know one of the things that is happening now and not many people are talking about it, is that we gamers have a mentality of high end everything...

Yes.

However, we now can go out and buy a Pentium 133 for a thousand dollars, slap a hundred dollar network card in it and for the price of an MMX system we can have two P133s?

Yeah, certainly when you talk about LANs in the home, which I think already teenagers and young people are actually doing that with their machines. There are several people who work here who have roommates and such and they're setting up LANs in their house. And I have two young children and already I've got two computers in our home and I'm sure within a few years we'll have four or five (laughs) and soon it will be like the old television in every room kind of thing, there will be a lot more computers as well.

So, what comes next, Larry? What's on the plate for you? Another Star Wars title?

Well, yes. We are already in the pre-production stage of the highly desired and somewhat inevitable expansions and add-ons, because what we find with the products we work on is that you go through this incredible technology learning process and your final product usually doesn't contain nearly enough of all the ideas and thoughts and things that you'd want to put in, so we basically feel that we went through this incredible learning process so let's really deliver some more really cool content, missions and such. So that's what we are really hard at work now...putting together a plan and doing the production of the first expansion disk for X-Wing versus Tie Fighter as well as working on some free upgrades. One of the things that I was really committed to from the start and this is one of the benefits to the Internet, is that there is a lot more connectivity, if you will, to your customers... you can upgrade your product because you have access to your customers and they have access to you, so I wanted to capitalize on that from the begin-

ning by continuing to find ways to upgrade the product that will improve [the game]. One of the things we've already announced is that we will be offering a free upgrade for 3D hardware support.

That's all the questions I have unless there's something you would like to add?

Well, we've touched upon it already, but I wanted to make sure people really looked at the product for what it was trying to be, and not what it was not trying to be, and that it was trying to offer a new richness in multiplayer play and really in that, what we believe, is an incredible variety of playability, with the configurations and the different roles that people can play and such and really try them out. And try them out in single player too, because one of the things I personally take special pride in and some people may say it's too hard now, but there is a lot new challenges within the AI. It offers a whole a lot in single player, especially in Tournaments; they should try those in single player and see how well they can do. It really offers a way to prepare themselves for multiplayer play.



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ATLANTA, GEORGIA

ELECTRONIC ENTERTAINMENT EXPO

BY BEN MANSILL

Atlanta Georgia is a city with a few nice houses and the world's ugliest CBD. Atlanta's contribution to world culture, in ascending order of significance, is: the 1996 Olympics, the setting for *Gone With the Wind*, the home of Coca Cola and most importantly, the 1997 Electronic Entertainment Expo, or E3.

The third E3 was, predictably enough, the biggest yet. Atlanta's World Congress Center is one mother of a huge building, and for three days in late June it was packed with game publishers, developers, retailers, insidious journalists and the sexiest entertainment software that we, the species, have managed to come up with thus far. After six flights, countless Buds, two embarrassing episodes of Karaoke Sweet Home Alabama and no sleep, I'm (barely) able to report that the year ahead is going to be another happy one for gamers. The best yet, in fact - but hey, isn't it always?

3Dfx, C&C clones and flight sims

This year's show was notable for two things. These were immediately apparent upon first entering, and were reinforced to a stunning degree the more I saw. They are:

- With only a handful of exceptions, games were either 3Dfx-based action games or C&C clones (Real Time Strategy, if you want to be PC about it),
- Combat Flight Sims are well and truly back.

Just about every company there (a slight exaggeration, but not by much...) had a C&C clone on display. It was massive overload and absorbing the differences between them all, other than a different variation on the Post Apocalyptic Nuclear Wasteland scenario proved difficult. Dark Reign clearly shone as the best. It really is the next level of the genre. You may remember we reviewed it in PCPP #14 and stated that it was "available now", well, shit happens and Activision's "ironclad" promise that it would be ready at the stated date fell short. It's been delayed 8 weeks for "play balancing" - which means tweaking the unit's attributes

so all things are equal in multiplayer games. While disappointed by the delay, it is good to see that Activision want a perfect game on the shelves so as to avoid the ridiculous Red Alert Tank Rush tragedy. There were a couple of other fine efforts but most, sadly, were just pathetic and shameful attempts to cash in on the "hot genre".

Another genre that way overdue for some heat are flight sims. After years of stuff-all there were well over a dozen awesome looking and playing sims on display. If it weren't for a snappy little 3D card 1997 would firmly be remembered as the Year of the Flight Sim.

But it won't be. Instead the scene was dominated utterly and absolutely by the Voodoo Graphics 3Dfx. Listen up gamers, if you don't have one already, GET ONE! "Need" is as strong a word as I can use here, and is the one to use in the same sentence as "3Dfx". With only a handful of exceptions, games at E3 1997 were either a C&C clone or a 3Dfx-based 3D game. All the flight sims were, all but one of the first-person games

were (Daikatana - but only because the beta version of the 3Dfx game wasn't ready in time), all the driving games were... It was truly unbelievable. Each and every one of them looked amazing. A lame few used the 3Dfx in Direct3D mode, but most were native. Only one game was running in native Rendition Verite mode (a lone *Flying Nightmares II* PC), another one on the Matrox Mystique (*Moto Racer*) and one again on the VideoLogic PowerVR (Terracide). Each of those games has a far superior 3Dfx version anyway...

Personally, I am still in disbelief at just what the 3Dfx can do. Two years ago I would never have imagined that such graphics were possible. Extrapolate the dead and buried tradition of upgrading to a faster CPU for a slightly higher resolution mode each year, and back then I would have guessed that 10-15 years would need to have passed before such effects as we see now could have been achieved. I say again gamers, put aside whatever your next planned upgrade was and spend your next \$350 or

so on a 3Dfx. That's a Diamond Monster 3D, an Orchid Righteous 3D, the Flash 3D now, with more cards using the magic chipset coming all the time. Just get one.

THE GAMES

While many developers wussed out with cheap 'n' nasty rip offs, there were several outstanding games on display. Some were way overdue unveilings of games many years late, others were sneak previews of Works In Progress that nobody expected, and the rest were big titles that we knew were coming, but were blown away nonetheless. Let's look at the showstoppers:



Flying Nightmares 2

FLIGHT SIMS: JETS

FALCON 4.0

MicroProse
Early '98

After having written half a dozen "coming soon" previews for the promised King of Combat Flight Sims over the last 4 years or so, it now looks like this will be the last, for

Falcon 4.0 is in final beta testing and I can tentatively make the call of a 1st Quarter '98 release, possibly a month or few earlier if Microsoft really do have their shit together this time.

Falcon 4.0 could probably have been released anytime during those years, but the team keeps updating it to both compete with the opposition and incorporate new technology. This holding pattern could theoretically continue forever, but only fine tuning and polishing of the new 3D hardware graphics is left so it's really probably going to happen soon.

Naturally enough the sim looks amazing, and is comfortably the best looking of the new batch. A P90 with 3Dfx will run it as fast as you need, while a P166 will pump the game along in regulation 640 X 480 SVGA most detail no worries. In this mode, Falcon 4.0 runs beautifully and is some justification for the long development period.

Recognising individual tastes, MicroProse have incorporated the new style virtual cockpit for those digital watch fans impressed by that sort of thing, while purists get the much more practical fixed array of instruments. A very sexy full screen mode that allows for up to four stand-alone MFDs (one in each corner) is also there.

MicroProse cheated slightly by using photos of the Californian countryside for much of the terrain, but that's only because images of the real terrain with the detail they wanted was much harder to obtain. The contours and geography are all correct though and major landmarks and buildings were individually modelled. California or Korea, they're real terrain images in 16-bit colour and look vastly superior to anything an artist or computer can generate.

F-22 AIR DOMINATION FIGHTER

DID/Ocean
Late '98

This is what Ocean had us thinking all along was TFX3, the sequel to EF2000. Unlike Falcon 4.0, a sequel built from scratch, Ocean's new game retains the look and feel of EF2000 - albeit with a new aircraft and scenario. Ground and aircraft graphical detail, the interface and aircraft performance and handling were much the same. We'll see when the job's done whether they really did build upon the old, but a big bag of new features and 4 million square miles of (non-photo-



The fabled Falcon 4.0. Yes, it's really real!

graphic) 3D world stretching from the mid east to north Africa will make it a must-play in any case.

Like just about every new modern combat sim, this one is modelled on the all-powerful super-performance largely automated F-22. It'll be fun comparing all the different flight models as the new sims are completed, as they all claim to possess perfectly accurate flight models while the all try to achieve the same result. As far as DIDs F-22 is concerned, the similarities with EF2000 is the first thing that's noticeable in the work in progress, which hopefully means work is going ahead in other areas while the flight model I saw is only an interim one. Going back a step though, EF2000 itself wasn't that far removed from its own predecessor, TFX...

The first shipping will not have any structured campaign, instead a collection of one-off mission much like Mindscape's SU-27. Six weeks after the initial release there will be a mission disk with a proper mission set.

During play it will be possible to jump into the cockpit of any other fighter in the war zone. You can

even jump to the AWACS and play the conflict as a strategy game, ordering your networked team mates (up to 16, and maybe 32 players is planned) around while you oversee the big picture. The development team view this option as integral, but largely it's just another "nice touch". If you think it's an especially cool feature then the sim for you is Flying Nightmares II.

Joint Strike Fighter





EF2000 V2.0

DID/Ocean
September

An odd marketing decision, this is really only a 3D hardware patched version of the existing 2 year old EF2000. You get both the DOS and Win 95 versions on the CD plus some other minor enhancements. While it's certainly a fine game, Existing EF2000 owners will simply download the free patch which will be available at the same time as this new shrinkwrapped box, while potential new customers will be spending their time and money with the new generation of combat sims. Fantastic product support from DID this, but weird commercial sense.

FLYING NIGHTMARES II

Eidos
Christmas

Like all the new flight sims, seeing this 3D hardware driven sim for the first time is a jaw dropping experience. The graphics are simply unf*ckingbelievable, short of the detail Falcon 4.0 manages, but much nicer than computer-graphics look of DID's F-22. This one, also like Falcon 4.0 is in the "like looking out your window" category. Photorealism is now a term we can use without enticing calls of "yeah, right".

Designed primarily for internet and LAN play, the caper is for a "Commandant" to play in a real time strategy mode, ordering teamed pilots to do their thing while an opposing team takes you on in the Cuban scenario. Both the Cobra attack helicopter and the Harrier AV8B are simulated, and the game encourages specific tactics based upon these aircraft's characteristics. Fog of war, for example, would allow only the slow moving Cobra a chance to spot a partially concealed infantryman. Neither aircraft offers spectacular performance overall, but this game is designed carefully to bring out individual interpretations of the capabilities of the aircraft - you know, skill. Pilots will specialize and some players may choose to only ever play as Commandant. Expect clan-like online squadrons to fight it out for virtual status and respect.

IF-22 RAPTOR

Digital
Integration/Interactive Magic
Early-mid '98

Compared to EF2000's 4 million square miles and Falcon 4.0's full north and South Korea, the mere 250,000 square miles Digital Integration has come up with is a tad small. They're like that, Digital Integration. Since their early days the company has reliably built their sims around three sets of canned missions, usually around a dozen in each. Also since the beginning, IM have had the best mission editor by a long shot and flight models equal to, or better than anything else out there, depending on who's parochial opinion you seek.

From Tornado (the most underrated sim of all time - sheer brilliance and eminently playable for years to come), through to Apache and Hind, the games have pleasingly remained consistently excellent, but not so pleasingly, haven't advanced in the slightest over all those years.

Now with iF-22 it's almost a whole new ball game. It flies and looks new. Not as pretty as the other new games, but good enough to hold a proud head high amongst the new crowd. It's still cursed with the 3-set of 12 canned missions though... hello...!

The incomplete game felt convincingly real, but without a yardstick at this early stage its comparative quality is a call I'm not prepared to make. Realistic avionics should prove to be among the best.

IM is a no compromises company in that respect and iF-22s cockpit was suitably scary and intimidating.

F-22 RAPTOR

Novalogic
Christmas

While Interactive Magic threw a little "i" in front of its title for individuality, Novalogic threw a curve ball at IM in the form of an attempted legal coup for exclusive rights to the plane itself. Thankfully this silliness passed, but Novalogic are staying true to their original claims to 100% accurate modelling. Funnily, their reputation is one of pretty arcade quick 'n' easy shooters. Comanche and their earlier F-22 Lightning II are distant cousins now, with only the latter's 3D engine in common.

Whatever Novalogic's claims, their F-22 simply doesn't look to have the depth and hardcore features of DID's game, and possibly even IM's. Novalogic went for the realism claim with their recent Comanche 3 and lost a few credibility points as a result. With their reputation on the line the new F-22 will be undoubtedly better and more realistic than their previous games, but whether it measures up to the opposition remains to be seen. Still, all their older games delivered a big dose of satisfying fun and if they hold true to that recipe while stirring in some absorbing realism then the news could be good.

SABRE ACE: CONFLICT OVER KOREA

Virgin
Christmas

Hip hip bloody hooray. Some different and interesting planes to fly. Finally we get to fly the classic first generation jet fighters, along with the last breed of prop fighters that saw them in.

Fly a Yak-9 and attempt an intercept on Gen. MacArthur's transport, or fly a Mustang P-51D and keep the big fella alive. The sim's canned missions (with random generator for enemy locations) will move you onto the F-80 Shooting Star, F-86 Sabre, MiG-15 and others. They handle by the book, have authentic cockpits, have guns only, no radar and are a pig to fly generally. Fantastic!



(above) Team Apache



Fighter Ace

TEAM APACHE

Eidos

Christmas

This and EA's Apache AH64D Longbow occupy the serious end of the chopper slot. Developer Simis say it's for real and the beta on show was impressive, but noticeably incomplete. Like all new Eidos games it absolutely stank quality. Hardcore mission design and proper, non candyfied graphics. The flight model is the great unknown, but a quick chuckaround of the early model encouraged a bet.

JOINT STRIKE FIGHTER (JSF)

Eidos

Unknown

JSF looks tremendous in the square mile stakes with 10 million of the bastards. All of it as geographically real as they say it always is and dotted with that rarest of jet sim features - trees.

The version at E3 wasn't hardware 3D yet but it ran nicely in SVGA on what was, like all the E3 machines, at least a P200MMX. During a running of the hands-on PC PowerPlay Low Level Attack Test it performed admirably for a pre-beta. The future looks as bright as it could for this simulation of a plane that is still in the design phase and won't enter service for another 10 years.

IF-16

Digital Integration/Interactive Magic

September

DI's flight model expertise is put to the test in their first fixed wing dogfighter sim. Avionics are sweet but the final beta handled a bit too comfortably for demanding pilots. A quality play nevertheless, this will be the first out and will keep us fixed for the couple of months until there's more choice.

Microsoft Flight Sim 98



FLIGHT SIMS: Props

Jets schmetts. What the world desperately needs are more outstanding single and multiplay WWII combat sims. As it turns out, that's just what turned up at E3.

All are 3D hardware-gorgeous, have extensive multiplay and good-enough single play, all looked and felt joyous, all had a complete and often exotic collection of planes to fly and by god I'm happy as a result.

FIGHTER SQUADRON: THE SCREAMIN' DEMONS OVER EUROPE

Activision

November

Ninety big missions. That'll do. With a "semi live" virtual battle field and a dedicated effort towards realism, this looks like at least one of the best.

WARBIRDS 2.0

Interactive Magic

Soon

This online game and Confirmed Kill have the net to themselves and thus it has always been. Unfortunately, version 2.0 doesn't add anything that'll help it compete with the new sims on the block, and it looks like the remaining diehards will be compelled to jump the fence as the new games have better everything.

MICROSOFT FLIGHT SIM 98

Them

Now

Death, taxes and MS Flight Sim. Here's the new one. It's got a helicopter now. Woo.

FIGHTER ACE

Microsoft

Christmas

This one should do mighty well on the Internet Gaming Zone (or the "Zone", as you'd call it if you're cool like Microsoft). Start up your own little campaign for a bunch of your pals and take part in the planned historical re-enactments. Major realism if you want it with easy peasy newbie mode.

HARD

Just about every game that needed a joystick used the new Microsoft Force Feedback Pro stick. All except the flight sims, that is, which almost exclusively used the Thrustly FLCs combined with either the TQS or the CH Pro Throttle. Some low to medium range throttles and fully featured sticks made new appearances, but nothing that's ready to challenge the domination CH and Thrustmaster hold over the high end of the market.

The Microsoft stick, which was unveiled for the first time at the show, shares none of the failings of the first generation of Microsoft Sidewinders. It also completely buries the abysmal CH Force FX stick and establishes Force Feedback itself as a pleasantly viable game option - something which was looking a little shaky when the CH stick debuted the technology. As with all things Microsoft, it doesn't apply itself exclusively to a particular hard core niche, but instead serves all types with a carefully compromised design. Without false military pretences and looking neither cool or kiddy, the stick is ergonomically excellent for the right hand and usable with the left, if that's your steering hand. A wheel throttle that pokes out sideways instead of up lets you dial in throttle input more precisely and comfortably, and while it isn't as good to use as a separate throttle system, it isn't the hassle to set up either. Inside though is where the revolution has really taken place. Unlike the analogue CH it's digital and has far tighter and smoother gearing, making it crisp and accurate and smooth compared with the loose and bumpy CH. It's also much smaller and needs only the joyport, unlike the CH which also needs an almost certainly valuable serial port. Built in too is an infrared sensor that pauses motorised movement when you let go - and can even be set to pause then game at the same time! Tres cool.

Microsoft's stick also benefits enormously from the new Direct X 5.0, which allows complete and easy button programming, as well as insanely cool features that hadn't even occurred to this joystick critic, like software controlled spring tension, as a big and sexy for example. The thing's even got a 25MHz 16-bit microprocessor onboard that runs the whole show, as opposed to the CH which uses your CPU, potentially slowing down your game.



STRATEGY

The most populous genre at the show was sadly just a huge collection of dismally disappointing Red Alert clones. Only a handful of truly original games stood out - and those were noticeable merely for the implementation of one or a few "nice touches" over the top of a dull and dreary nothing-new engine.

All this repetitive monotony was a major disappointment. Most clone makers, it seems, seem to be motivated only by making a few bucks out of undiscerning and ill-informed gamers who'll play any RTS, regardless of the quality.

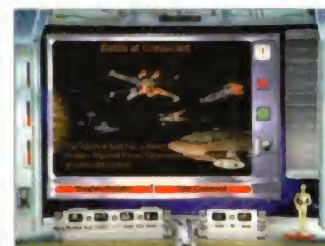
Only two or three strategy games stood out. The extra effort these designers put in will pay major dividends, as their games will be played over the 30 or more straight clones.

Best of the RTS category was easily Dark Reign. This was a safe bet prior to the show, barring an unexpected unveiling of something remarkable, which, somewhat disappointingly, didn't happen.

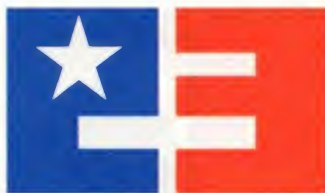
The crowds around the Dark Reign stand were consistently bigger than most other stands, and always included opposition design-

ers (easily identifiable by their shirts) checking out the goods. Blizzard shirts were particularly noticeable, with the faces unsmiling and concerned. Their Starcraft is continually being held back for refinement and polishing to keep it competitive.

What I saw of LucasArts' Rebellion looked refreshingly positive. Many new design concepts are at work here and strategy gamers



Rebellion



should be as happy as Star Wars playanythings. A full playtest wasn't an option at the show though, so we'll have to wait...

Best of the straight Red Alert clones which I saw was probably **Dark Colony** from Gametek. On the originality front the game's upgradeable units are able to be carried over to the next scenario, but generally it was the look and polish of the game which let it shine.

Local kids Beam Software showed **KKND Special Edition**. With a bunch of new missions and a new skirmish mode it was clear they were mostly only playing catch up though.

Interplay's excellent and under-appreciated **M.A.X.** is back as a sequel, **M.A.X. 2**. The new game is one of the few truly original designs out there and among other enhancements, features a choice of three gameplay modes: Real Time, Simultaneous Turn Based and Classic Turn Based. These options should bring in the simpler gamers alienated by the original's somewhat intimidating game style.

With a couple of dozen cheap 'n' insulting C&C clones on display, anything new and different was bound to attract attention. Enter **Netstorm** from Activision. One of the few games at E3 that was an entirely new concept, this seemingly internet and LAN perfect game also features strong single play elements - don't be deceived by the name! Players take on either each other or the computer across a set of floating islands, building bridges and automated weaponry, as well as more magic and flying craft than you'll be able to get your brain around in just a short play. The designer expects a 4 player game to be over in around 10 min-

Netstorm



Dark Reign

utes, making for a fast and vicious diversion from more epic games.

All up though, the strategy genre is in need on a big injection of fresh thought. The best that the creators of the style, Virgin, could manage was Red Alert: Sole Survivor. The caper here is to go online and pick an existing unit, any unit, and duke it out with up to 50 opponents. Powerups and health make the whole thing work. For a quick burst of strategy action it does look pretty damn good and will no doubt get lots of online attention for a while, but pushing the envelope it isn't.

FIRST-PERSON ACTION

QUAKE II

By far the biggest crowd at E3 was the one around the scant three Quake II monitors. Big surprise there. But hey, I had my

show map in hand and memory when the doors were opened on the first day, and virtually ran and barged my way past all the other attendees to check this wonder out first.

Level designer Tim Willitis was on hand and it was one major relief to discover that this sequel is far more than what

Doom 2 was to its' predecessor.

For starters the 16-bit graphics engine does away for ever with the drab old limited set of brown colours. Only the GL (3Dfx powered) version was on show, but that's the one 90% of Quakers will be playing - they having embraced 3Dfx before most other gamers. Needless to say, Quake II looked absolutely bloody amazing.

Translucent effects such as water, force fields and smoke were complimented by lighting effects that puts the original Quake to shame. Quake II also gets the weapons right. Go for it Quake extremists, start writing me hate letters, but as much as I love the game I thought the weapons sucked hard and could have been hugely better. In Quake II they are. They look incredibly cool (very important) have much better practical applications and are simply more fun to use. Part of the new look is the Duke Nukem style of showing the guns offset slightly, although not anywhere near as much as that game. Hands holding



them have been incorporated too, which would bother a Quake extremist initially, but relax, it works well, is unobtrusive and adds greatly to the experience.

It was scary for a few months there - would id get Quake II right? Yep yep yep yep they surely did, it's AWESOME.

UNREAL

By comparison, the much vaunted Unreal was left wallowing. It is an excellent game with all the right ingredients, and was far superior to all but Quake II itself, but was unfortunately right next to the Quake II stand and suffered as a result. Unreal has all the right stuff, but Quake II's lighting was much better and the monsters way cooler. Unreal's weaponry looked excellent, but had that unfortunate reek of try-hard and was more innovative and over the top than actually grunty, sexy and useful.

I'm not for a second dismissing Unreal, it already looks like a 90% + game, but in this genre comparisons are all, and at this beta stage Quake is nudging ahead. Unreal does score the points in the architecture dept though. I'll wait till the full versions of each to pass final judgement, but at the show Unreal's penchant towards wild originality paid off with level design that was clever and challenging.

Quake 2

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apocalypse

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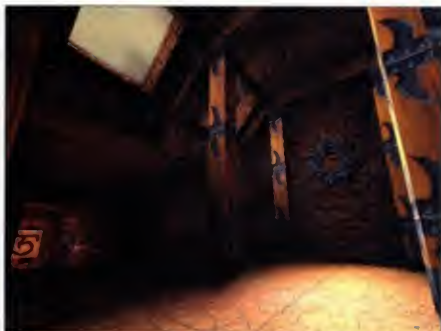
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(top) Unreal (above) Daikatana

DAIKATANA

Ion Storm, if you don't know already, is the new development company founded by id's John Romero and Tom Hall. The split was far from amiable, with Romero wanting the traditional development approach of several simultaneous projects while the boutique software boys at id prefer to licence their engine and maybe release one game per year, if that.

Romero hopes to have Daikatana out by Christmas. Based on the rushed, non-3D hardware, show special demo I saw, there's no chance whatsoever of that happening.

Romero intends that Daikatana be a richer and more interactive environment than Quake. Compared to Quake's 10 monsters, Daikatana will pack 64 in, Quake has seven weapons, Daikatana

promises 35. They clearly have what it takes - the numbers, the design talent, the resources and importantly, the motivation to prove a point and produce a better game than Quake II.

The show beta, using the Quake engine as the final will, ran unaccelerated in low res and had a very small playing area. Clearly much thought had gone into making it as different as possible, but it was simply way too early to tell.

HEXEN II

This rocked, hard. We'll be doing a full review next issue (hopefully!) and this one is looking good. The RPG elements are much stronger than

the original with a very crowded status bar and a carefully constructed game environment where all main areas are linked via a central hub, much like the original.

TUROK: DINOSAUR HUNTER

For years it was perfectly OK for PC gamers to dismiss Nintendo games with superior derision. No more. This is the first Nintendo 64 port and it's one we've been hanging for. The levels are linear and simplistic, the premise is silly, but the weapons... Never, in the history of human computer gaming, have such an outrageously sexy and meaty collection of weapons been assembled in one game. The gameplay is a little stinky, but running around firing the planet sodomiser is one hell of a joyous experience. 1 player only though...

JEDI KNIGHT: DARK FORCES II

An early beta I saw months ago looked a little dodgy, but the final I played at the show dispelled all doubts. This is a Star Wars product that not only brings the magic of that automatically comes with that universe, but is a remarkable gaming achievement in its own right.

Use the Force to pick up distant objects, fend off incoming laser fire with your light sabre, play the game through as either Good or Evil... Yes! Amazing level architecture - huge and convoluted in all the right ways. A winner worth waiting for.

SIN

A major surprise this one. A side project by Activision, this one is built around the original Quake engine, but with an enhancement that lets it run in 16-bit colour mode. The designer was there, his name badge read "Levelord"... Go figure...

Sin had absolutely the best level design at E3 - better than Quake II, better than Unreal. This small project won't be seen until the new year and is generating little publicity. Remember the name, for Sin is the one.

DRIVING

Post Apocalyptic road combat games were a dime a dozen at E3. Most game companies had one, along with the regulation C&C clone. Only a couple really stood out. Best of the lot by a mile was Cart from our good friends Microsoft. Not knowing American racing formulas too well I can't say exactly what a "Cart" class is, but they look, sound and GO like an IndyCar. Cart features a virtual cockpit (that can be turned off if it bugs you). Turn into a corner and the view turns in slightly with you. This is no gimmick, it allows a great feel for the corner ahead and provides real situational awareness in traffic. The driving model was just beautiful - none of the impossible difficulty of Indycar or GP2 - just pure, hard, realistic, fluid racing. This one deserves to be big, count on lots of future coverage.

The only other noteworthy sim was from Ubisoft, makers of the lovably playable POD. Un-named at this stage and scheduled for a Christmas release, the F1 game should completely bury GP2 with great looks, realism, complex setup options and



full FIA licensed support.

Psynosis had Formula 1 98 running. It's an enhanced version of their original Playstation to PC port and finally has an in-cockpit mode.

THE BEST OF THE REST

It wasn't all flight sims and C&C. Sifting through the staggering amount of games on show turned up some gems, some predictable, others a real surprise. Here's the best of the rest:

TOMB RAIDER 2

Eidos

The best looking and most over-rated game of last year is returning with a couple of new Lara moves, a new city environment and bugger all else.

STAR WARS MASTERS

Lucasarts

A 3D fighting game in the mould of Virtua Fighter, but with the Star Wars cast duking it out. I could neither stop laughing or take it seriously. Funny and about the most pointless game I've ever seen.

HEAVY GEAR

Activision

Having lost the FASA Mechwarrior license to MicroProse, Activision are striking back with an enhancement of the original engine and generally better game design.



(top) Hexen 2 (above) Jedi Knight



Microsoft's Cart



(top to bottom) G-Police, Interstate '78, Messiah, Tomb Raider 2, Star Trek: Secret of Vulcan Fury, Monkey Island 3



DUNGEON KEEPER

Bullfrog

Yes, it's real. I have failed you, reader, in that I was unable to fight my way through the 10-deep crowd to actually play the game on display, but reports were that gameplay was gold-plated, although the graphics I could see were unremarkable.

POPULOUS 3: THE THIRD COMING

EA

Weird and probably brilliant. Loosely based on the first two, this is basically a Little Guys Running Around Killing Each Other game, but with intense resource management and the option to play either in the traditional overhead view, or the funky 3D mode.

ARMOURD FIST 2 AND TANK PLATOON 2

The former from Novalogic and the later a sequel to the original gem from Microprose. Both will reinvent the tank sim genre and give it some long overdue credibility.

MONKEY ISLAND 3

LucasArts

Guaranteed adventure gaming quality from LucasArts, the masters of the genre.

PICTIONARY

Hasbro

When this bizarre title from Hasbro ships at Christmas it could well sit aside You Don't Know Jack as a top social multiplayer experience. Draw with the mouse and get into the 6 excellent sub games.

BLADE RUNNER

Virgin

A jaw-dropping ohmigod kinda game. The intro shows computer generated actors as real as I've ever seen them and the gameplay cap-

tures every last drop of that dark, brooding movie atmosphere. Sean Young and a few other bit-players are in the game, but no Rutger or Harrison...

STAR TREK: SECRET OF VULCAN FURY

Interplay

Interplay have Star Fleet Academy in the works too and I'm sure it'll be good, but this blew me away completely. It looks like the original TV series - primary colours, toga chicks, the works. Seeing the computer generated actors move and talk is up there with the most impressive computer game achievements of all time.

RIVEN

Broderbund

Here it is, the sequel to Myst. Whether you love or hate Myst, this sequel is undeniably beautiful and has a comparative abundance of moving parts.

G-POLICE

Psynopsis

Single player sci-fi flight action combat perfection. A helijet that handles beautifully, rarely compelling plot and graphics to make you fall off your chair.

MESSIAH

Shiny

Very early in development, but Dave Perry's secret new project is looking incredible. Software driven 3D acceleration that looked as good as the best 3Dfx title. Play a cute baby with angel wings hunting down surrealistic baddies by possessing their body and committing suicide. Who said all the original ideas were taken?



AND THE WINNERS ARE...

Certain games are better than others, but with every company in the industry trying to impress it was quickly apparent who's got the goods overall. Here's a quick rundown on the game companies that stole the thunder from the rest.

Activision

From dead and buried to #1 in 2 years. Activision not only have a huge range of games, but each and every one of them is a potential #1. Quake II, Hexen II, Dark Reign, Sin and all the rest. Put simply, Activision rule.

Virgin

With Blade Runner and Lands of Lore this team automatically make the grade. But they've got much more, and unlike many other big publishers, still have the quality-first mindset.

Hasbro

Watch these guys, they've got their act together and some brilliantly different games in the works.

Broderbund

With Riven (the Myst sequel) due, these guys are cementing their place a smaller niche publisher who'll only do the best of the best.

GT Interactive

While these publishers don't do their own internal development, they have managed to bring in a startling array of unbelievable third party titles. They are getting big and scary and are motivated purely by profit - not even bothering with the commonly used "by gamers for gamers" style of line. Still they've got the sugar...

Ocean

With sim gods DID under their belt and a most impressive space combat epic called I-Wars coming, the Ocean stand was one to hang out at. Lot's more from this bunch of winners to come.

Psynopsis

Consistent quality and a feel for gameplay that most other companies are still trying to figure out. The Psynopsis stand and the Activision stand were easily the best.

Interplay

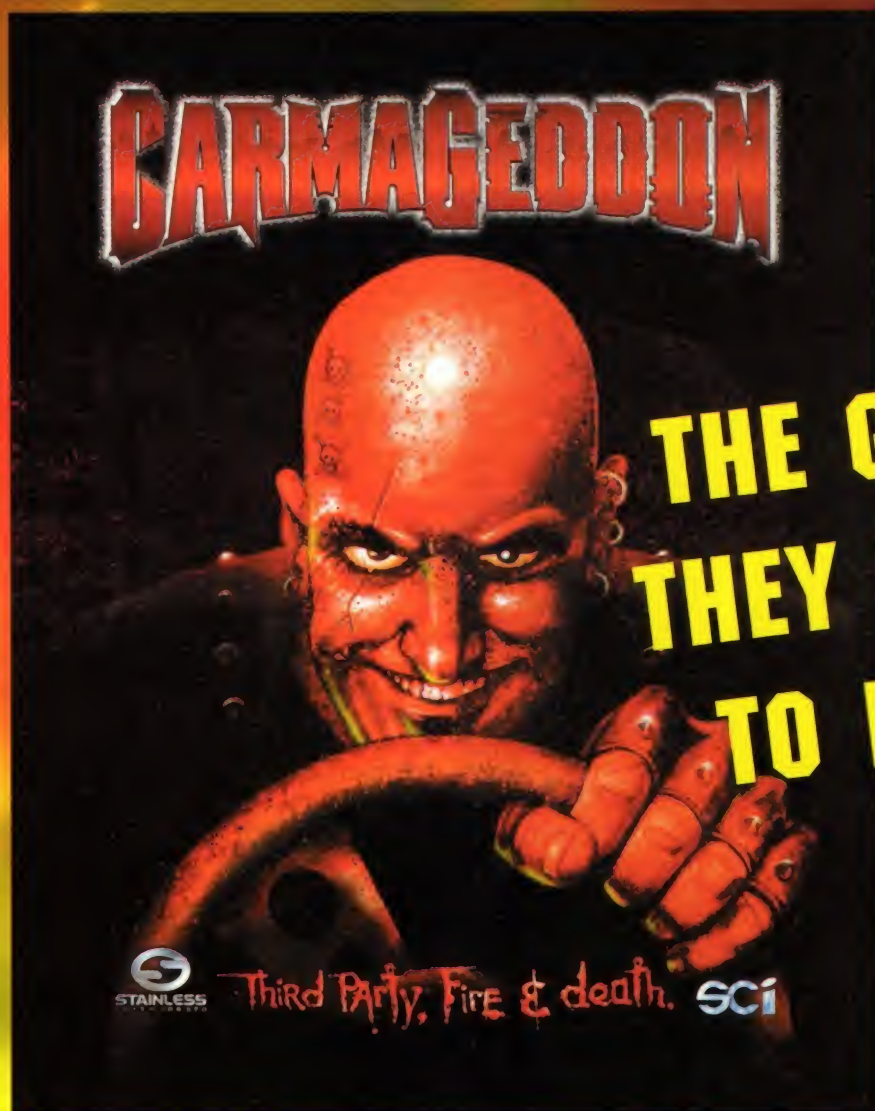
Look closely at any new Interplay title. They take risks and their judgement rarely fails.

EA

A huge, monolithic mother of a huge company - but one that's got the spirit and attitude of the smaller designers.

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I N P R O F I L E :

CORE

design



Core Design, who are now part of the expanding giant publisher Eidos, had possibly the biggest hit of 96 with Tomb Raider. Even well into 97, the game is still selling well and there is no let up in its' continued success, with even U2 composing a track for Lara the sexy lead character in the game. Core, based in Derby, are fairly independent from the main Eidos office and with 40 people working in development, they are shortly to expand. The next title due is Fighting Force, followed by the eagerly awaited Tomb Raider 2 in November.

Susie Hamilton (SH) has been the PR voice at Core for over 5 years. The spokesman for the Tomb Raider 2 Team was Gavin Rummery (GR).

Tomb Raider 2

November

Were you surprised at the success of Tomb Raider and do you feel the game would have been so big if not for Eidos?

I still think it would have been big, but it is difficult to say how big without the injection of cash and the marketing expertise from the people at Eidos. We were able to reach a far wider audience than perhaps if we were just Core on our own. The mainstream activities really made a big difference with articles in some of the leading newspapers and lifestyle magazines which has helped to reach a wider audience than the specific gaming press.

Strangely enough, my job has not been made easier for there is a constant battle to regulate what is going on, especially with Tomb Raider 2. It has firmly established Core Design as a major developer of PC games, whereas before most of our success had been conversions or Amiga games. Tomb Raider has really put our name on the map as a major PC game developer/designer.

Core remain fairly autonomous from the central office and we have the final say if perhaps Eidos have an idea and we believe that a different approach is required. If things stay as they are, as Core being the developer whilst Eidos are the publisher, then that would be the perfect situation for the future. (SH)

Who comes up with the ideas for games at Core, and the Tomb Raider concept especially?

This is down to the developers themselves. They have their ear to the ground and so understand what is required by the public. The games they write are the games they would buy themselves. The final decision would be made by our MD, Jeremy Smith, but we generally try to let the teams be as creative as possible and it has been a working formula so far.

The idea came from one of the team who wanted to do a cinematic looking game with adventure elements. One of the main criteria was to be able to see the main character at all times in the Indy Jones mode. (Gavin Rummery, GR)

The controls were difficult and cumbersome - have you made them any easier and how hard was it to ensure both the Playstation and PC version worked well?

It was quite difficult to get the controls working well on both formats. Originally Lara was going to have 20/30 different animations, but as the game progressed it became harder and harder to link things together. You could go for a move and because there were so many things going on you would find yourself hitting the wall when you/she jumped. It was tough link-



ing the animations with the controls and movement but we managed to get it right with less animation. There was certainly no compromise for either of the formats. The control system was designed to work on any machine as long as they had enough buttons. (Jason Gosling/Programmer)

Even if you asked us about any compromise between the Playstation and PC when it came to graphics, I would have to say there was no problems apart from the restraints of the machine. The PC and Playstation are well matched in terms of graphics, the real problem is the speed on the Playstation. The PC has more power to do calculations (Jason Gosling).

What tools/program - have you used for the modelling of the characters movements. Was motion capturing used?(MC) Lara moved like a lady! - was she modelled on anyone?

No, there was no motion capture used it has all been done via either our in house tools or proprietary packages like 3D studio. The reason the graphics and animations looks so good is the amount of expertise and time spent working on it. We have designed a nice animation editor so we can look at the animations before they go into the game, and then they can be simply added. From texturing to the final version is a long process.(GR)

Lara has not been modelled on any person, but for the second game we have found a person who

looks very much like the character and we shall use her in some of our promotional events! (SH)

Tomb Raider 2, Is it a sequel or a completely new story, new graphics and even new code?

We are revamping the engine with a brand new story, totally different to the first. There are also new characters and loads of new locations, none of which you would have remotely seen in the first game. All the bad guys are new. It is a case of improving on everything we have already got, right down to the camera angles. We have even added a pony tail to Lara! (GR).

How important to you is the storyline?

The game is an interactive adventure come puzzle product, and so the storyline is not that important. As long as the player has some kind of general scenario the plot is not that important it is the puzzles that make the game, along with the look!

What improvements are there on the graphical side - this was one of the most impressive features of the game?

Part one to the question will be that on the graphical side we shall have dynamic lighting, where light changes with the game. An example would be if you shoot a gun, it will light up the air around you and even cast shadows if the light source passes over an object. The different type of lighting will act like a flare. A sunset in one level will give a totally different lighting looking than one with say electrical

lights. This will change the look dramatically. (GR)

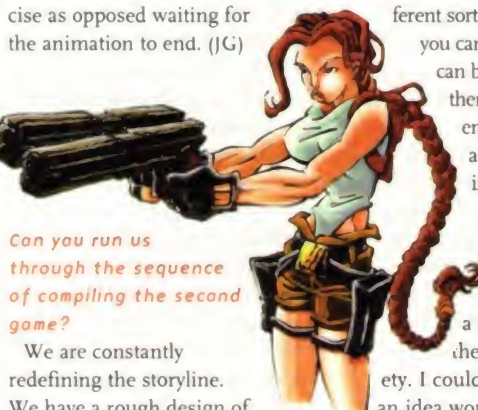
Other new impressive features will be outdoor sections as well as indoors!

In terms of size, puzzles and environment, how does this compare with the original?

It is hard to make the game any bigger for the first one was big anyway and that was limited to the restrictions of memory. So the answer is about the same size as the original.

From feedback from the first game, what if anything became apparent to improve on for TR2?

A lot of feedback was pertaining to the camera shots, so we have worked on this a lot. A lot of the new added extras come from direct feedback. People wanted more outside action and so we have Lara outside - even allowing her to climb up walls! We have tweaked the controls. You can actually jump when you want to and the controls and movement is more precise as opposed waiting for the animation to end. (JG)



Can you run us through the sequence of compiling the second game?

We are constantly redefining the storyline. We have a rough design of the game and with the use of editors, start putting things together from day one. The process is to build up the levels adding puzzles, etc. The story can actually come after we have devised and created levels and puzzles! This time

round things are running faster and smoother in terms of coding and putting the game together. On the first game we had to wait for the editors to be written but now the artists have been working from the start with them. (GR)

Please give the readers on insight into the new game, the story and concept and objectives?

The most important focus is that we know that although we are on a roll, and expectations are high for the follow up, we still have to ensure you have solid gameplay. One way to achieve this is to have lots of surprise factors in the game. We must ensure that people get the same buzz as from the first game and that means we must change everything so no one can say it is too much like the first game.

Last time we plundered all the ancient civilisations and so now we have gone for a Chinese feel, but also taking you to more modern locations! You start off in Venice in a sunken ship and move onto Tibet and just these two locations allow us very different sorts of puzzles. In Tibet

you can have lots of ice and we can build puzzles around this theme. One proviso is to ensure that we build levels around thought provoking locations.

The puzzles are designed initially by the map/level team, but we all have a say in them to ensure there is interest and variety. I could be sitting down and an idea would come to me and I would draw out a simple sketch and we would all then work on it. Every level has a main objective, puzzle and sub puzzle. We have also gone for more human bad guys which gives a far greater challenge than an animal.



(above left to right) Outdoor Lara, Venice Lara, Venice editor, Cat on hot tin roof Lara. The new Lara adventures through more everyday locations, with all the locations inhabited by far more characters than the original

Fighting Force

September



Fighting games on the Playstation are too numerous to name, but all of them have sold well and there are not that many duff games around. To a lesser degree the PC has not been catered for that well, but Fighting Force from Core is a class act. It is gorgeous to look at and to play. Both versions were up and running, and for once a fighting game generated excitement and interest and looks set to do exceedingly well when released in September. The best person to talk us through the game was the designer himself, Roberto Cirillo!

Firstly, who came up with the idea - run us through the objectives and locations?

I guess as the designer you can say me. I have also worked on the textures and at present I am working on the main moves for the players. The idea is to put the player in a New Yorkish environment, or a big city with all the surrounding locations like car parks, trains station, etc. You must conjure up a realistic looking environment and in total we have 10 locations. The main objective of the game is to roam around and fight and try to stay as healthy as possible. Starting off in a car park you progress along the high street and finally you should end up in an office block to face the final boss

character. All the locations of course are different and so there is a mixture of moving in parks, underground stations, main line stations, Bronx and even military bases which all go into making this a game with lots of visual variety. There are even special states, one of which is a flying fortress which is near the end of the game where you have to get onto a secret island to finish off the final boss. All told there are 7 levels, which are divided into 24 stages and the nice feature is that each of the levels has many routes so each time you do not necessarily go along the same path so you will face different baddies, there are certain points within a level where you will be able to choose from a number of routes. This means you can play the game a number of times and it will be different each time, add the many secret locations and you have a massive environment within a complete 3D world.

What facets/movements/special powers do the four main characters have?

What, you want me to list all the special moves!!!!. The main aim of the game is to learn about what the 4 main characters can do, understand their attributes which are of course different for each character. Because it is a fully 3D game all the characters get attacked from all sides. The main moves which we categorise as 360 degree moves are the ones that are indeed special. If you get surrounded by a host of baddies, you can quickly get rid of them all via one of the 360 degree moves. There are in total 40 moves per character and you can smash people necks, grab them and throw them - it is really as extensive as you can imagine. We are trying to make the game quite violent but also staying within a strict boundary that keeps the game looking realistic.



(above left to right) The Fighting Force team and Susie Hamilton

How realistic is the movement of the players and have you designed your own 3D engine?

We have designed our own 3D engine and editor. The movements are a compromise between realism and also ensuring they play effectively and that is the fine balance that we believe will make the game sell. The characters are large and the animation of all the cast is smooth. The trick is to make a move look like you can do it in real life but if you tried it you would find it impossible!

When you fight are you set within a limited play area or can you run off or move freely around?

Total freedom and you can run away if you so wish!

With so many movements per character (40+) - how hard is it to learn them?

That's tough to get right. We look at games like Streets of Rage, Tekken 2 and we also mean in terms of controls as well as gameplay. We have tried to make the controls as intuitive as possible. Some games we do appreciate you need a degree to understand the endless moves and combos. Streets of Rage of instance is too easy - kick, kick, kick, punch, punch punch. We must ensure we have balance. In the 2 player game, working with your partner can be great fun and we are designing moves specially for 2 player mode!

Can the player interact with the scenery, is this essential for gameplay to find things or is it

there for cosmetic purposes?

I would say both. You have to have the game looking right but you must also have a fully interactive environment. Say for instance you are moving towards a car, you can go to it, smash it up and even grab an engine to chuck around and even take some bits and use them as weapons. This is the case for lots of the scenery. In some instances you can wreck scenery just for the love of it without any real objectives. All the action is via walking around... certainly no swimming or racing in cars.

If you die, is your game saved when you reach certain stages?

Of course, but we are working on the best way to approach this. We certainly do not want to get the user annoyed.

What type of interaction is there within the game and how do you find out what is required?

We did not want this to be a Zelda game and so it really is a case of moving around and finding out what to do by trial and error. The basic point of the game is that it is a great looking, free flowing, fighting game and basically you can do what you want. It is escapism for what you cannot do in real life, like go down town and smash some cars up and cause havoc. Well you could do this I suppose but I would not advise it.

What do you feel are the strong selling points of the game?

There are lots of fighting games around but this combines total 3D with an arena, plus the look and feel of the game is cool and gameplay is tops! The interaction side is the best facet and one we shall push.

Derek dela Fuente



Gone are the days of the 2D, side-scrolling beat 'em up. Fighting Force allows full exploration of the environment & is designed to provide a completely new fighting experience

IT'S GUTS 'N' GARTERS in DNA DANGER

The ultimate
3D strategy
adventure
game.



G8+

LOW LEVEL
ANIMATED VIOLENCE

Guts 'N' Garters is one on its own. To say it has arcade action in a stunning, multi-destructible environment with complex problems to be solved on the run is to miss out the game's incredible technical achievement of light sourcing and shadow management and fully animated locations.



PC DOS/
WIN '95



ocean

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ryo has been around for a good many years. Until now, their reputation has been built by companies like Virgin and

Mindscape, who have distributed their games. Now Cryo are striking out on their own. In a huge office on the outskirts of Paris they have an impressive set-up and the expertise behind their games is of the highest standard. Cryo seem to have a passion for the making of games, a passion that goes beyond that of most development teams.

Cryo's MD Jean Martial Lefranc speaks with PowerPlay's Derek dela Fuente...

How many people now work at your Cryo office and what type of breakdown is there - programmers, artists, musicians, etc?

With the advancement of the PC, how do you keep tabs on what machine and specs to write for in 6 months when games like UBIK, etc. will appear? Even in 3 months a graphics card can become outdated...

We work very closely with Intel and Microsoft, which are of course a very valuable source of information. We try to target the mainstream machines and users. We spend time and resources tracking down what is selling and what is not in both games and machines. Whenever a graphics card comes onto the scene we look at it closely and get feedback as to the response it has had from the general public. Obtaining market share demographics of hardware is also a task for us.

Looking at your list of titles for the coming year, you appear to have every area covered from Internet games to adventure to action. Is it possible you can fall between all the areas? Most top developers are noted for a style of game...

What we are trying to do is to refocus on adventure games. With Atlantis you have action adventure and with another title it may be with more character interaction. I do not feel we would fall in between categories. We have had pure action games but looking towards the future most of our titles are adventure led.

Some of the graphics within your games are photo realistic. What type of approach do you use? Is it a mix of hand drawings (scanned in), real life pictures, etc.?

enhancing tools for an engine, etc. We do try for all the people to have an input but ensure that people are experts in their own field.

What are your thoughts on stop-frame animation and FMV - are these aspects you utilise?

Stop frame animation is very nice and I am a great fan of it, but within Cryo we do not have the expertise. I must confess I am a fan on Henry Salic.

FMV is pleasant enough but it has dropped out of fashion. The time and money spent putting FMV together in the past does not appear cost effective, for the game players were not that interested in it. Yes, I do remember that Mega Race included lots of FMV but that was over 18 months ago and at the time that was the fashion. We spent a lot of time in the studios but no more!



The impressive and innovative French developer in profile.

We now have over 150 people working at Cryo. 15 of them take care of the marketing, media and distribution, 40 programmers, 70 graphic artists and the rest is split between people who write/design the storyboard and create the sound and music.

Why are now publishing games in your own right - were you pleased with the coverage you got from Virgin and Mindscape?

We were happy with both companies, but we wanted to move on further and take charge of things. We wanted to build Cryo as a brand. With the market becoming more and more difficult for the publisher, we felt we needed to have more control over our own production. A lot of time was spent with Virgin on strategies, with them informing us what market trends were, etc. Doing it ourselves we learn and understand it and so we can approach things in our own way. This way there is no interference and we make all the decisions.

As regards development, it must be good to up the specs for a game, but do you not feel that the end user will suffer? When games like POD have such high specs a lot of people are missing out - do you try keeping specs low?

I agree it is a problem for the public to keep up with development and the constant upgrading of hardware. The main problem is that the consumer wants the best and this relies on us utilising the best hardware around and also you must compete against other developers. We try to ensure that if the CPU uses a lot of processing power with high res. graphics we try to ensure the game will run in lower res. and so need less processor power. We believe that working towards a P90 machine is fair and in a year's time we shall up this a bit.

What 3D card would you recommend?

It must be 3Dfx.

We in the company use a technique called "scopthing" and it is very much like sampling in music and this technique is a mixture of different images: real elements, scanned, photos, partial photos, hand drawing.

What type of process do you go through when designing and producing a game - do all people have input? do you have teams or is it a shared pool for all games?

Basically the first step is to have a designer, a storyboarder and programmer, who will work together for about 6 months to put a game design together - this would be a demonstration of the product. This would come under the banner of pre-production. Once this is done we would decide whether to green light the product into full production. In full development we would have one team dedicated to the product. There would be NO sharing of the team. The exception to that would be in that we have one pool for R&D for development and

What do you feel is Cryo's main expertise - do you look towards presenting and creating a game much in the way a film is done?

As far as presenting a game in the style of a film I would say no. Our focus is to design a solid game. Once we have placed down the game's instructions then we try to paste it with a good story. We used to think the other way around which is like a film. Most gameplay is non linear and so that you have to work on how to design a level, interaction, etc. It is to ensure that a game has no imbalance. Once you have a good game with an interesting storyline you can add an attractive looking universe. Our aim is to get the gameplay across to the player and try to help them into a game in an interesting way.

Regarding Riverworld, (PC CD ROM, Summer), how in-depth is Riverworld and will it be a part of a series? It is a vast world, so how big is the game and how close to the story have you stuck? Isn't this too large a

game to produce?

Riverworld can be a part of a series, but first we must see how the first game is received. We have made it big but not as big as the books. The world as you know is very big and so we have concentrated on one aspect which is exploration and resource management. We have kept down the adventure element, but you do get to meet historical figures like Queen Victoria and Julius Caesar but you are linking to the genius in the civilisation rather than to characters from an adventure game. It is based on gameplay which we have input and produced from the Riverworld universe which is very attractive. It has a very similar style to a game called The Settlers, but you have freer movement and being able to control well known people from history is fascinating.

Can you be yourself or will you be a set character?

You play the part of Richard Francis Burton.

Will there be any sex in it, as he is a very suggestive/rocy writer?

Long laugh from Jean... No, most of

of Stone and the last the age of Steam. Going through these ages, which are like levels, you are able to build one element that will take you from one age to another. For an example at the end of the age of stone, the epitome of that technology is a huge bridge that goes

UBIK and so we choose our subject matter with a great deal of thought. Blade Runner is a very different type of game. UBIK with its' Cryogenics and life after death plays a very important role and is very interesting for us, much stronger than the theme between humans and Robots.

What 3D card would you recommend? "It must be 3Dfx."

the racy bits are in his other books! If you look around occasionally you may see some frolicking behind your back!

Was there any input from the famous author of Riverworld, P. Farmer, or were you given guidelines?

No. We took all the references

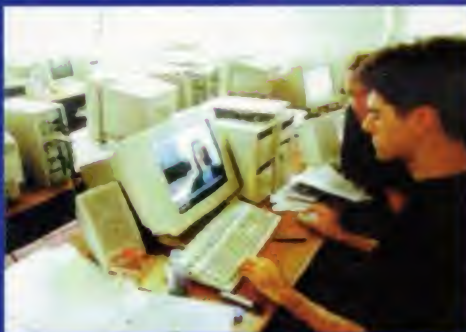
from one side to the other of a river and when you have managed to combine these elements you are able to move across and go onto the next state.

Onto UBIK, is this a short story from Philip Dick?

No, it is a book. It may not be the

A brief on the game to UBIK?

The unique point to this game is that it is a combination of combat and strategy, where you direct a team of both psychics and swots. The key element is that you have to complete the mission by combining carefully the strengths of the people you have taken on your team. It is a little bit like C&C meets Syndicate Wars, but with the look and feel of Little Big Adventure. You will have real time 3D characters that are big and



Cryo Headquarters in Paris and one of their latest projects; Riverworld

Are there any strategy elements which you feel present a new appeal or approach?

It is one of the first games where you move from a top down perspective to inside a world. It is set within a 3D immersive environment and that is really the key element to the game. Rather than moving little pieces around, you can actually interact with real people, side by side.

Is it based on one book or the general theme?

It is based on the first book, although we covered the whole story because at the end of the game you must find the black tower and you understand the real secret of Riverworld.

Will you use characters and dialogue from the book like in Dune, or will it be open ended?

We are using real characters from the book, but they are not telling any direct elements of the story, so it is in effect like you say, open ended!

from his writing. There was a RPG game and we told him that we would move slightly in that area and that was enough for him to give us the go ahead.

Please can you give us a brief on the game?

What need to be done by the player, who plays Richard Francis Burton, is to influence the other characters which are dispersed

best known but some of his fans think it is kind of a new bible.

Did you choose him because of his post track record - (Total Recall?) and is the game similar in style?

No, UBIK is very important to Cryo because it is one of our most important inspirations. The logo of Cryo, which is a woman that is sleeping in a cryogenic state comes from UBIK. It is a character from the book called

"the way we see Cryo is to focus on the older player with a more serious attitude"

throughout the environment, which can be either warrior, diplomat, engineer or creature. By combining the talents of these people and getting them to work for you you expand your territory and you must then conquer to find certain resources to create the very best technology of that time. You will be able to go through four different ages. First stage being the age

Ella, who is an important character and plays a major role. The name Cryo came from this lady.

Have you considered doing anything to do with Blade Runner - Do Androids Dream of Electric Sheep? Would you like to if given the chance?

Blade Runner is being done by Westwood. We like the theme of

move against precalculated backgrounds in which you can move the camera very swiftly with our new compression techniques and editor to combine the background. For most of our game we believe in writing new code for each product although we do use some old routines. The game is billed under strategy and combat.

You are very much into cerebral novels, does this give you more latitude to designing a game?

It does not give us more latitude, but it is the niche of games where we are trying to build the Cryo trademark. The way we see Cryo is to focus on the older player with a more serious attitude, between 25 and 30 years old and even older. To try and create games for this audience is tough for they are more discerning about games and the storyline and this is the type of challenge we like. This gives us distinction from the competition.

The Games:

DREAMS to Reality

September

Ancient Egypt. Four priests gather around the Blue Water, mirror of the well of dreams. One of them will later return, host to a dark force.

Today. A young man dives into an ice-cold lake and senses the presence of shadow. Blue Shadow.

Dive into the universe of Dreams

- Complete real time 3D immersion: walk, jump, run, swim, fly, dialogue and combat.
- The splendour of rendered graphics in fast-action real time 3D.

your universe. Then nurture your landscapes and people your planets with beings. Fashion them as you wish and give them everything they need to grow. From stopping a plague, to starting one, your divine hand will shape each world you create, as you attempt to increase your peoples' faith in you. Play against the program's simulation engine or log on to the Internet and discover that you are not alone: Other Intervention players roam the multi-universe. Reach out to other worlds, while carefully minding your own, and assert your

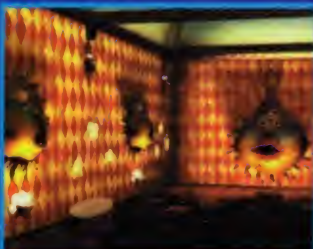
UBIK

October

From the science fiction thriller by Philip K. Dick, who brought you Blade Runner and Total Recall, comes an entirely new kind of challenge: UBIK. New York in the year 2019 mega-corporations, cryonics, colonies in space... and an on-going war of industrial espionage. Using guns and explosives, gangs of greedy agents fight a vicious battle for information, control and money. The worst is they can read your mind. Master your own psychic powers

accurate to 50 square kilometres - is populated based on actual census projections and includes hundreds of political, demographic, sociological, geographical and economic surprises. It is accompanied by an archive of amusing and provocative animated news and advertising clips.

- The entire world is represented based on actual census, socio-economic and ecological projections for the period 2000 to 2500.
- A wide range of world characteristics: numerous religions, ethnic groups and political systems.



- Hundreds of astonishing animated sequences.
- Over 100 places to visit and explore.
- Over 100 characters: dreamers, monsters, superior entities and humans.
- The power to create. The power to destroy.
- Action, Magic, Adventure, Intrigue.
- 3D real time engine, 65k colours in a wide variety of SVGA resolutions.
- Artificial intelligence: genetic and DMS (decision making system) for control of allies and enemies.
- Exterior and interior game sets.
- Advanced Motion blending.

INTERVENTION

JULY 97

A Game of Divine Strategy.

In Intervention your quest is not for gold, but for adoration. First create

supremacy, while keeping in check forces of evil that thrive on your mistakes. Intervention: From hurled bolts of lightning, to the oblivion of being forgotten, it's tough being the Almighty.

- Powerful simulation engine incorporates artificial intelligence technology to generate challenging situations to manage.
- Play against the computer, on a local network (up to 16 players) or on the Internet (up to 100 players).
- Choose and modify the kind of god you want to be, and how your worshippers perceive you (benevolent with a heaven, wrathful with a hell).
- Define and modify each world that you create and the natural characteristics that shape the development of your worshippers' civilisations (geography, weather, resources).

and choose your squad with care as you take on the brutal challenge of an action, adventure and strategy game that requires both brawn and brains.

THE THIRD MILLENNIUM

Summer

A Strategy Game of World Unification.

Civil wars, military juntas, inner-city gangs: we already know what the world will look like in the year 2000. What about the year 2500? You are challenged to bring a very desperate world together over the course of 500 years. An innovative simulation engine responds to your actions and generates an infinite number of real time 3D characters. A visually rich isometric world map -

- Infinite number of characters, generated spontaneously in reaction to the player's choices by an innovative simulation engine which incorporates artificial intelligence technology.
- Isometric map of the world with several levels of zoom, accurate up to 50 square kilometres.
- 3D sprites represent buildings and other strategic objects on isometric map.
- Over 40 minutes of news, advertising and political interview segments produced in 3D or retouched television footage challenge and amuse the player over the 500 years of the game.
- Player can choose the continent on which he starts the game.
- Windows 95-native application with own graphic interface.

With Discworld doing well, has this resulted in you picking famous authors?

We had success with an author before Discworld, with Dune. We picked up Mr Farmer and Mr Dick before Discworld. When we did see Discworld we thought it was very good and it was good news that this kind of product sold well. It showed us that there was potential.

Books like Ringworld by Larry Niven never really hit the mark, how will you ensure you can present the works of the famous authors in a good light?

The issue is that people are buying the game and we are not trying to associate with Mr Farmer and Mr Dick to give us more awareness. What we are looking for is authors

other sources like political and economical issues. It can be pretty accurate, the only point is that the accuracy in this type of project can be very stupid looking. The way we have tried to avoid this kind of ridicule is to put humour into the title and tried to make it a political simulation that is not politically correct in the kind of events being described. It is serious in terms of data and the way we are trying to make people feel happy by not taking things too seriously. The game is very focused on management and the storyline is secondary. This comes over to the player in the form of TV news. As you move into the future you will see themes from TV. The game's interface is a world simulation.

"UBIK is very important to Cryo because it is one of our most important inspirations. The logo of Cryo, which is a woman that is sleeping in a cryogenic state comes from UBIK. It is a character from the book called Ella, who is an important character and plays a major role. The name Cryo came from this lady"

that have created universe/environmentments that are interesting - very wide, defined and coherent and it takes a lot of talent to be able to put this universe together, rather than trying to emulate an environment ourselves we feel that a link up with an author with a ready designed location is easier for us than to concentrate on the gameplay, rather than trying to write a new story that may not be as effective or as well written. The authors are part of our team and their participation is in their story as opposed to bringing in awareness of their titles or marketing of their product.

Please can you also give us an insight into Third Millennium PC CD ROM. You state it is a management game that includes political, social, geographical and economical data for the years 2000 to 2500. Where did you get this data from and do you see it as being in any way typical as to the way things could go?

We sourced data from a lot of groups. We tried to ensure the game is very realistic certainly in the year 2000. We then projected from there with information projected from science and many

Finally, what are Cryo's plans for the future?

Traditionally there are two main areas, US and France, where we have had success. We would like to succeed in Japan. We are really concentrating on the US because it is a big market. In Japan the situation is very difficult because we change distribution from one title to another. They are very excited about Atlantis with its great graphics. With Millennium they find it hard to understand a game of political intrigue with humour. With UBIK I was surprised that in Japan it is very well known, whereas in the US it is more an underground cult. We are now getting good feedback from Japan. One area we may focus on is to make characters in a game more appealing to the Japanese market. We may even have 2 versions of characters for our games, one for Europe and the US and the other for Japan.

We do intend to start up a US team comprising US and French people in Oregon within the Dark Horse Comic building who we have worked with. We shall work on one of their comic strip characters for a game.

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sex, lies & videogames

These games are for adults, so why is the government treating us like children?

Sex and violence has been a part of life arguably since the dawn of man. Only now in recent years we have been able to interact with realistic acts of sex and violence on our TVs and computer screens. With computers pushing the envelope of realism, it's becoming hard to distinguish from fact or fiction. Is realistic portrayals of sex and violence in computer games harmful, or just another fact of life? Simon Gruer investigates the issues...

The Violence Factor

Video games are one of the most popular forms of entertainment in our world. Video games dominate our homes as they appear in our desktop computers and are offered via game consoles like the Playstation and Nintendo 64. The popularity these venues of video entertainment provide is evidenced by the patterns of consumer spending. In the United States alone,

In the relatively short history of computer games, violence has been an integral part of the gameplay. Don't get me wrong, not all games are violent and bloodthirsty, one of the very first computer games in history "Pong" was a simple (and addictive) variation of tennis and squash. When we take a look at even the most primitive video games we can see the underlying level of violence. Take the "godfather" of video games, Space Invaders. The object of the game is to destroy as many spacecraft you can before they destroy you. This form of violence is better described as a survival or defense like situation, where the object of the game is the accumulation of the most points possible. The question of the affect of violence in video games is more speculative than factual as there has been limited study in the area. This lack of research reflects an attitude of indifference from some segments of the computer

activity. The game puts you in control of a closed circuit TV network inside a large house where a group of teenage girls are having a slumber party. The basic description of the game is enough to make the discerning parent think twice, but it's not that bad at all, it's actually quite a silly piece of software.

Another FMV game that has caused a bit of a stir is the quite brutal, Phantasmagoria 2. With a production cost of over \$3 million, Phantasmagoria 2 is a lavish point and click horror that includes some excessively violent scenes. It had been banned for sale in Australia up until earlier this year due to its violent content. Unlike videos, computer games have no <R>18+ rating in Australia, so if a game falls into that category it is refused classification and subsequently banned.

Ultraviolence

With the advance of technology we have seen video games become

the opportunity to kill your opponent in a very visual and violent way. Some rip their opponents heads off while others dismember their victims in showers of blood and gore. Although the Mortal Kombat series has been immensely popular, it has caused the Australian government to give video games classification an overhaul. Nowadays when you walk into an arcade you will notice that every machine displays the Office of Film and Literature ratings symbol.

Another excessively violent game for the PC is Duke Nukem 3D. Like most other games of its type, you have to save the world by killing hordes of alien nasties but the element that almost got it banned was far worse, violence towards women. At certain points in the game you find helpless women cocooned in alien pods, when you walk close to them you can hear them whisper the words "kill me". One level of the game is set in a strip bar where

It is not the function of Government to keep the citizen from falling into error; it is the function of the citizen to keep the Government from falling into error.

Robert H. Jackson (1892-1954), U.S. Judge

consumers spend more on video games- about \$9 billion a year, including some \$8 billion for coin-op and \$1 billion for home games- than on any other form of entertainment, including movies and music. One game alone, Atari's awesome Asteroids, earned about as much just in its best year (\$700-800 million) than the biggest money-making film of all time, Gone With The Wind, has made in four decades of screenings! If money is power then it is equally fitting to think that video games have some inherent power of their own. Many parent's are convinced that video games will transform their children's minds to mush. Others fear that video games cause delinquency, deviant behaviour and even interfere with human psychological development. In addition, certain theories suggest that video games can increase violent behaviour and have the potential to distort symbols and metaphors concerning our world. Why did violence play such a large role in the video games that were first produced? Do video games actually alter our emotions and sensibilities?

community. To further emphasize the lack of current research, the bulk of the information available dates from the mid 70s to late 80s and cannot take into account the new technology recently made available to the producers of electronic games to enhance the presentation of the violence found in some of the most popular games today. Is the enhanced violence having an effect and if so what is the extent of that effect?

Full Motion Video (FMV)

Computers are still a long way from producing convincing photo realism but until then, we are lucky enough to have the next best thing: Full Motion Video (add sarcasm here). FMV was full of promise to make films an interactive experience, to give the viewer limited control of the film. One of the first uses of FMV was incidentally one of the first games to get the censorship ball rolling, Digital Pictures' Night Trap. Night Trap was misinterpreted as being an interactive horror filled with gratuitous sex and violence where in fact it's no more than a bad B-grade teen scare flick with limited inter-



Leisure suit Larry

more advanced, as well as becoming more violent. The Street Fighter series of games gained immense popularity in the early 90s and has spawned countless clones trying to cash in on its success. It had wide appeal for its fast and frantic gameplay as well as its two player head to head feature, where players could match their skills against each other. Of the many clones that sprung up on the heels of the Street Fighter series, none have been as controversial as Mortal Kombat. The Mortal Kombat series are among the most violent video games ever created. It brought a new term to fighting games: the Fatality, where you get



Carmageddon

numerous scantily clad women are dancing, if you approach them and press the space bar you throw a few dollars at their feet and say the words "do ya wanna dance?" or "shake it baby". If you accidentally fire on these helpless women they explode screaming in pain.

Is this form of violence really necessary? The Australian govern-

ment says no and had delayed the release of Duke Nukem 3D in an attempt to ban it. When it was finally released it came with the parental lock (an option in the US release) permanently turned on. The parental lock takes away all the blood and gore as well as all women in the game. Almost as soon as the retail version of Duke Nukem 3D was released a hack to remove the parental lock surfaced on the Internet, some retail outlets even offered the disk to customers "under the counter" when they purchased a copy of the game.

A game that looks set to cause some controversy when released is Postal. Developed by "Running with Scissors", Postal looks like being a very violent game indeed. Then name "Postal" is taken from an incident in the US where a postal worker killed 15 of his co-workers in a

audience a certain degree of attachment with the medium. The viewer is able to enhance their own ego via the image on the screen. During this process, the media may communicate with the viewer and pass along ideas and depictions. Film's enlarged image help engulf the viewer's ego more strongly than television. These same principles also explain why people become involved with video games.

But, the attachment that video games exert on the players is more apparent and arguably more intense than cinema and televisual forms. Players are able to identify with super human powers that normally lie in fantasy. The video game allows the users to directly visualize, utilize, and hear these fantastic, super human powers. Another side effect of video games' ability to tap the players' uncon-

not discouraged by interruptions and is rewarded by immediate progression to the spatial location of the prior game saved.

A major cultural concern of video games is its encouragement of individualism and the game's limited degrees of freedom. When video games first hit the arcades, psychologists claimed that the video games were detrimental because they demanded a one on one relationship with the player. The player ignored the surroundings and was entranced by the game. Furthermore, the games usually had only one participant which increased the importance of the individual rather than community. Such individualism was thought to be antisocial and could interfere with child development. Ironically, they found that the arcade was a social setting. The

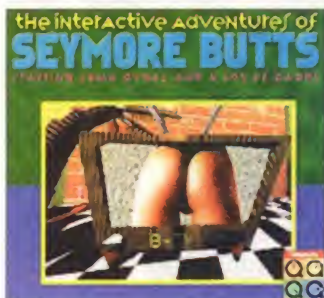
threatening environment. The psychoanalytic theory of aggression says that violence in video games serves as a catharsis. One relieves aggressive desire via symbolic killing rather than the actual experience.

Although video games have many negative connotations, the games have been seen in positive light as well. The author of Mind and Media, Patricia Greenfield says, "I am convinced that the people who criticize video games do not understand what the games involve". Greenfield states that video games require the player to develop a strategy based on observation of the situation. He uses the example of Pac-Man. Each ghost has a distinct personality and will react differently in given situations. The instructions do not tell this to the player. It is



Governments around the globe are rushing to barricade their borders, dam the flow of foreign data, and create a new world information order. For good reason: an uncensored Net connection can be as deadly to a 20th century government as the plague was three centuries ago.

Declan McCullagh



shooting spree ending with his suicide. The violent origins of the name alone are enough to make censors think twice about allowing this game be sold in stores. One game that has just recently been allowed for MA +15 restricted sale is Carmageddon, a driving game with some rather tasteless features. You are given points for running down as many pedestrians as you can as well as attempting to destroy other cars on the road.

Are violent games dangerous to our health?

Why do we insist on having such high levels of violence in computer games? Is banning such games unconstitutional? The social acceptance of these issues seem to be split right down the middle. Television and cinema permit the

scious is known as the "Second Self" as described by Shelly Turkel. The "Second Self" is easy to spot within a gaming environment. People tend to move their bodies as they manoeuvre their characters during dangerous situations. The body acts as if it is in the game world. Players will also swear or yell in excitement as if they were speaking to the machine.

These actions mark a strong emotional attachment between the player and the game. Furthermore, games have the ability to acquire all of the participant's attention. Television does not demand that the participants devote all of their attention. Often, people leave the television active while they are in other parts of the house, listening to the audio content only. If the game players divert their attention then they will die and the game ends. Many games have a pause or save feature which ensures that the user will come back to play the game again if they become bored or have to leave. This equates to an extension of the player's extinction period associated with the enjoyment value that the game possesses. Since the game will resume from the last position, the user is

games were usually not accessible to players at all times and they ended up talking to each other while waiting. The advent of home video game systems has increased these worries once again.

Now, it is possible for a child to go home and play the computer without a large change of interruption. Some children have said that they prefer the company of the games rather than a human counterpart.

There are a variety of theories about the affects of violence on the individual. The arousal theory states that a physiological response to violence should initially increase as one engages in threatening experiences. These responses are then channelled in to the activities that one is exposed to. Therefore, a player will focus more on the threatening activity of the game, the violence. Thereby leaving the user in a temporary elevated state of violent stimulation once he/she walks away from the game. The social cognitive theory states that a person becomes more aggressive after observing a model who is acting aggressively. Later, the learned aggression is recalled when the individual is placed in a

the player's duty to figure this out and use it to their advantage. Greenfield relates the process of playing a game to the advanced computing method known as parallel processing. Parallel processing is a method by which two or more computers work on multiple tasks. The results are then used in the final stage of problem solving. Video game players take several inputs and formulate a result based on them like a parallel computer. Usually, there are more than one enemy on screen and usually they surround the protagonist's computer icon.

Although video games do offer a distorted culture, they do not distort culture any more than television and music videos. Therefore, a large concern should not be warranted, as studies have shown that television viewing goes down proportionally to the amount of time a user spends on the video game system. The claims that violence breeds more violence is a seemingly plausible and logical notion yet is not supported by repeatable evidence. Clearly more research is needed to determine the affects of video games on society.

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The Sex Factor

Where high level violence in computer games may be tolerated to a certain extent, acts of sexual intercourse, simulated or otherwise, are seen in a totally different light. At this point in time, you cannot walk into a computer game store and pick out the latest interactive sex CD ROM. Computer game and multimedia CD ROMs adhere to a set of guidelines as set by the Office of Film and Literature Classification. Any CD ROM that includes simu-

Valerie hit the streets and stood out as being one of the hottest CD ROMs of its time. Valerie is a rather voluptuous computer generated bimbo that the player has to "stimulate" in order to earn points. The sequel boasts the title of being the best selling adult computer game of all time and has won awards for best animation and graphics. The creators of Virtual Valerie, Reactor Inc. specialise mainly in erotic multimedia and are at the forefront of their genre. Reactor Inc. have also released a full computer



Virtual Valerie

"If you are afraid to exercise your freedoms, you have already lost them."

"Free speech only means something when it permits speech that is offensive."

- Anon.

lated or explicit depictions of sexual acts between consenting adults is Refused Classification. Although sexually explicit games are restricted in Australia, you can find them in various adult bookshops.

Some of the most popular (but not entirely explicit) sex games are the Leisure Suit Larry series. You take control of Larry, a sleazy single white male bachelor whose only ambition is to score chicks (sounds like someone I know). Although the subject matter may not appeal to everyone (especially women), Leisure Suit Larry is a lot more tasteful than your average sex orientated game. The first incarnation of the game "Leisure Suit Larry in the Land of the Lounge Lizards" was voted "Best Adventure/Fantasy Role Playing Game of 1987". The latest Larry adventure "Love for Sail" uses the latest FMV technology to put the player on a cruise ship called the "PMS Bouncy". Larry 7 gives the player the chance to put their own face and voice into the game and comes with scratch and sniff cards which allows you to smell your surroundings.

Larry has been entertaining lonely men for over ten years now and shows no sign of stopping.

In 1990 a game called Virtual

rendered comic book of the soon to be released game, Donna Matrix an adult computer game in which players serve a robotic dominatrix in a futuristic world populated by artificially intelligent sex toys.

Unfortunately, thanks to Australia's censorship laws on computer games, Virtual Valerie and her friends may never make it to our sex starved computer screens. :-)

It's natural...

As we all know, sex is a natural part of life and should not be suppressed by any government. The decision not to include <R>18+ when rating games does not seem to work in the favour of responsible adults. The Australian government seems to take the stereotypical view on computer games as being primarily produced for minors, hence the lack of a suitable ratings system. If you would like to voice your opinion on computer game censorship, you can contact the Senior Censor for Computer Games at the Office of Film and Literature Classification. <http://www.oflc.gov.au/>

Level 1,
255 Elizabeth St
Sydney NSW 2000 Australia

COMPUTER GAME CLASSIFICATION IN AUSTRALIA

The Computer Games Classification Scheme was inaugurated in May 1993. Games and images for sale, hire or arcade use are subject to classification against an agreed set of guidelines. Consumer Information is displayed on packaging and advertising. Here is a listing of all computer game classifications.



Classification Board

G

General, suitable for all persons under 15 years. Suitable for all ages Suitable for the youngest child and should not require parental supervision.

G(8+)

Suitable for persons under 15 years but may not be appropriate for younger children under 8 years who may have difficulty distinguishing between fantasy and reality. Material in this category would contain elements which might disturb or distress very young children. Elements warranting this category would include depictions of unrealistic or stylized violence even where considered mild. Mild horror or potentially frightening fantasy characters or situations. The mildest expletives, but only if infrequent.

M15+

Suitable for persons 15 years and over. This material would contain elements which might disturb, harm or offend those under 15 years to the extent that it is recommended for use by those 15 years and over. Depictions of realistic violence of low intensity (eg. punches, kicks, blows to realistic animated characters or real-life images). Supernatural or horror scenarios, but not if graphic or impactful low level coarse language, but not if excessive.

M15+

May not be sold, hired or demonstrated to persons under 15 years. Restricted to those 15 years and over. Depictions of realistic violence of medium intensity (eg impactful punches, kicks, blows and blood-shed to realistic animated characters or real-life images). Graphic or impactful supernatural or horror scenarios. Strong sexual references. Use of frequent crude language, but not if excessive, unduly assaultive or sexually explicit. Nudity, including genital detail, but only if there is a 'bona fide' educational, medical or community health purpose.

REFUSED

Material which includes any of the following will be refused: Violence: depictions of realistic violence, even if not detailed, relished or cruel, extreme horror scenarios or special effects, unduly relished acts of extreme violence or cruelty. Sex: nudity including genitalia unless there is a bona fide purpose, simulated or explicit depictions of sexual acts between consenting adults, any depiction of sexual violence or sexual activity involving non-consent of any kind, depictions of child sexual abuse, bestiality, sexual acts accompanied by offensive fetishes, or exploitative incest fantasies. Use of sexually explicit language. Detailed instruction or encouragement in matters of crime or violence, the abuse of proscribed drugs, depictions which encourage the use of tobacco or alcohol, or which depict drug abuse, depictions which are likely to endorse or promote ethnic, racial or religious hatred.

RISING LANDS

COMING SOON

Hundreds of years have passed since humanity was nearly totally decimated by a cataclysm which destroyed civilisation on Earth. The new society was tribal, forced to live in Medieval conditions once again. Made up of clans allied for or against one another on hostile ground....



Actual Screen Shots

"Last month we suspected Rising Lands would kill Warcraft2. Well, this month our suspicions are confirmed. With more appreciable aspects, this game is preparing the murder of its predecessor!"
GENERATION 4,
FRANCE, MAY '97



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CARMAGEDDON

Pedestrians, you have one minute to reach minimum safe distance...

Carmageddon is based around the premise of a driving-combat stunt game show style thing, which has contestants doing their darndest to win with speed, or at least pulverize the opposition along the way.

It is a viciously fast driving sim with impeccable physics, brilliant artificial intelligence, a superbly fluid graphics engine and all the invisible elements of fantastic gameplay.

Lookin good...

This game has to kind of engine that, when running at full detail



Heavily armed police trucks do heaps of damage

you find yourself marvelling at the complexity. When you tweak the extensive detail settings, you can still get a swish frame rate on an average machine. The landscape employed in Carmageddon is completely polygonal, save for a few token garnishments which are your single sided trees and boundary poles, etc. Each lip of each curve in the road is factored into your world. Even the spray of metal debris which scatters when you tank into an opponent at 140mph is gorgeously 3D and interspersed with bright sparks.

Not to mention the awesome distortion effects applied to the cars as they take a pounding... If the "Cops" manage to corner your car in this game, the resultant boisterously warped shapes are truly incredible, each panel twisted into toffee in full bezier-curved 3D. Obviously the visually trashed sections of your car relate to damage of the internal components residing within: e.g. tyres, steering col-

umn, drive train, gearbox etc. Which naturally has specifically detrimental affects on the car's manoeuvrability.

The scale of the cars you control in Carmageddon is fat, fresh and funky. Instantly controllable, they are easy to get used too, with a generous turning circle and auto gears (auto-reverse!), but still require finesse to master at high speeds. A few cool tricks like the wheel orientation not re-centering at low speeds make keyboard play that much easier. Not to say that you shouldn't play with a joystick, though, of course!

Real-enough handling

Carmageddon's physics are ultra real. Well real enough to still be fun. Certainly as real as something like Sega Rally, for

instance (especially during skidding and high speed stacks). You will find yourself applying real-world techniques to save yourself



Pretty pics of your opponents



The best part of the game - trashing other cars



With bonuses like this, it has to be an English game

and minimize the consequences as your world turns into rollercoaster high velocity hell. Your rotational impetus in any given direction continues to influence your vehicle as you fly off jumps and score major airtime. More often than not, this lands you on your roof, if you don't drive in moderation!

The Artificial Intelligence in Carmageddon is a whole big rubber ball of fun. A variety of original and good ideas that make the

enemy computers more human basically involves intentionally making them a little bit stupid. In lesser driving games Non-Player-Characters that get angry, pointedly pick on other players, and don't hang around where the action is really look wooden compared to what Stainless Software came up with. These players are opportunists. If they are in front, and nobody turns up for an appreciable amount of time, they get

bored and wait for someone to arrive who they can pick a fight with. One of the many unpredictable things I have seen them do is to turn around and run headlong into the pack as it caught up, apparently just for the chaos it creates!



Realistic driving model & dynamics



Malicious AI that's just as insane as you are

Cunning Stunt Bonus

The outrageously defiant stunts that you pull off without smashing every panel on your car and still driving away are awarded a "Cunning Stunt Bonus", or an "Extra Style Bonus". You usually have fair knowledge of these feats, because the in-cockpit facial expression of your player's character whoops and yeehas with joy. Similarly, they shout, yelp and bounce their helmet off the dashboard during smashes.

The terrains in which you race have great variety, with an odd futuristic feel. In the City zone you are driving through a crowded concrete metropolis, another has you hooning through drainage tunnels in an abandoned industrial factory, and varied others including the generic snow zone and some excellent semi-submerged driving which has a modelled feel all its own.

Pedestrians, cows and the law

A much-publicised aspect of this game involves the somewhat pointless inclusion of pedestrians on the racetrack as a form of humorous fodder. Depicted in simplistic 2D bitmaps, employing repetitive sounds and exploding into ridiculous messes when run over, they are hardly anything to shout censorship about. The developer's intention was probably to fill the quiet sections of the game with some form of activity.

On the contrary, the game suffers for their addition, as much for the annoyance they add to gameplay as the bad publicity it has stirred up in the media.

The pedestrian-killing function of the game can be disabled with a single keypress (F6).

The music employed in the game is a predictable heavy-metal kind of deal, but the surprising part is the quality of it. It is actually pretty good, as far as these things go.

Carmageddon incorporates the best elements of the best

+ Plus

www.sci.co/carmageddon/
Still to come...

36-tracks, multiple cars to play with, SVGA modes.
3Dfx and Rendition support, probably not
Direct 3D - Yeahh!



racing games released to date. It is a dream come true for hardcore racing heads, and will probably provide the benchmark for drive-combat games for years to come.

Eddie Dawson

90%

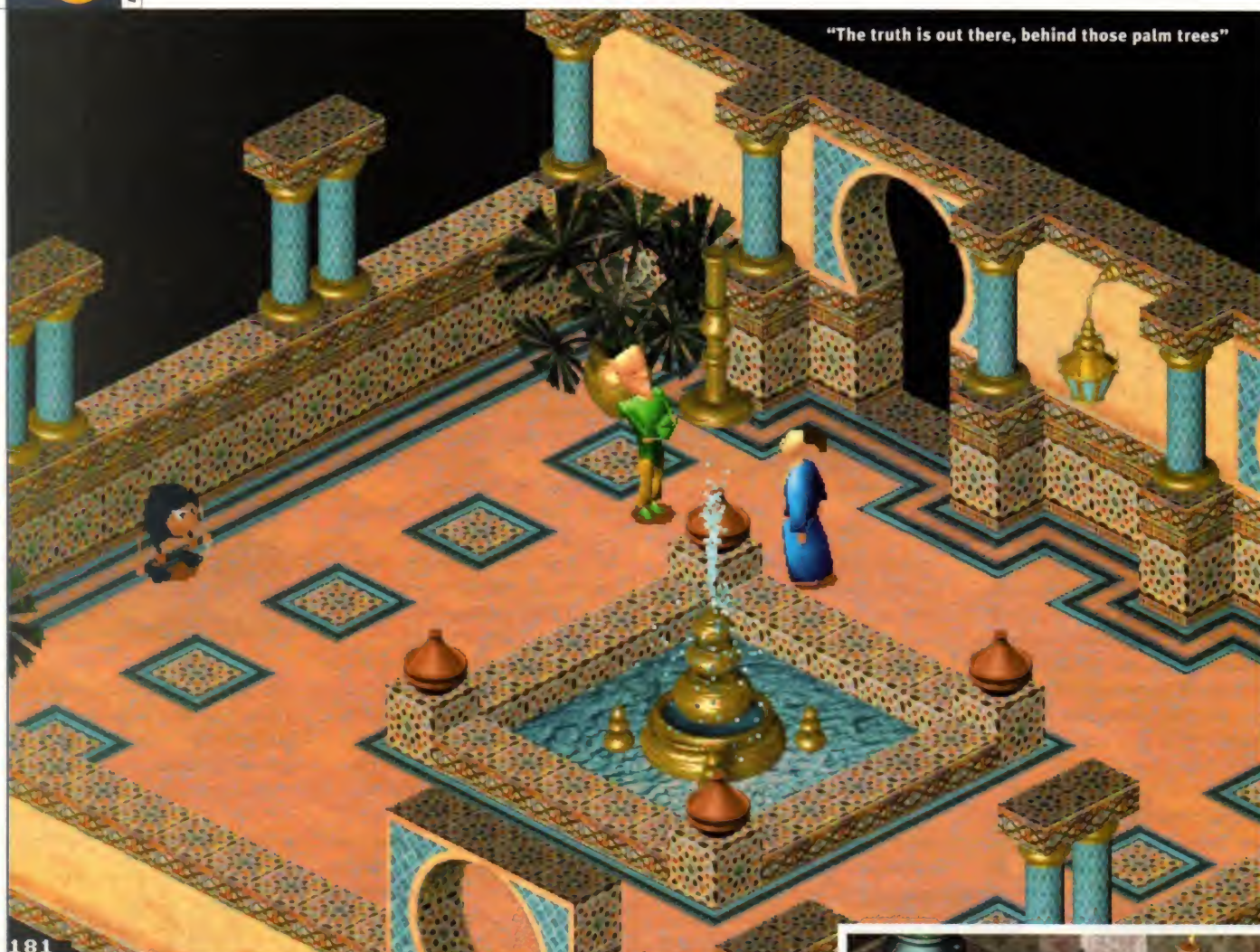
Category	Driving/Combat
Players	1-8
Publisher	Stainless Steel/SCI
Price	\$89.95
Rating	MA15+
Available	Now

For You can drive absolutely anywhere. Fantastic graphics engine and near-perfect gameplay complete the puzzle.

Against Levels can take a boringly long time to load, and the pedestrian's scream sample can really get on your nerves. Considering these are the only things wrong with it, why hesitate? We certainly wouldn't!

Need Pentium 75, 16 Mb RAM, 40Mb HDD

Want Pentium 166+, 32Mb RAM, 200 Mb HDD, 16 x CD



"The truth is out there, behind those palm trees"

181

LITTLE BIG ADVENTURE 2

Cute and cool are usually mutually exclusive, in life and in games. Here's an exception. We all love Twinsen and so will you.

Twinsen is a magical world populated by cute talking elephants, neurotic rats and the occasional camel or two. In this world lives Twinsen, the erstwhile hero of this rather large adventure



"Just show us to the bathroom, Ratboy"

game. Those of you who played and enjoyed the original Relentless will no doubt have been looking forward to the sequel for some time now and you won't be disappointed with it either.

The story starts with Twinsen's friend Dino-Fly getting a bit of shock treatment in a thunder storm and crash diving into the nearest lump of rock. From here on it's up to you to find a cure for poor old Dino, even if it means travelling half way 'round the world and back again.

The many moods of Twinsen
The interface will be familiar to

former Little Big Adventurer's, with a control setup based entirely on keyboard input. Your alter ego Twinsen has four different moods or states, each with its' own special moves and abilities. In the normal state he walks and talks, pokes, prods and activates things with a bash of the space bar. In 'sporty' mode Twinsen runs, hops and jumps. 'Aggressive' mode gets him all hot and bothered, throwing wild punches and kicks into the air and then there's the cautious mode where he sneaks, peeks and slinks around as quietly as possible. Sounds like all the Spice Girls



"I said TOMATO sauce"



Ride the wild turtle



"I have some nice rubbing lotion"



"Nice frock, Bozo"



I wonder if Mrs Sneed is waxing her legs tonight"

rolled into one, doesn't it? It's a neat system, as it negates the need for millions of keyboard commands, with all your actions being done with the direction keys and the space bar!

The world of Twinsun is a very pretty place, containing some of the nicest graphics I've ever seen in an adventure game. There are four different camera views to take it all in with, and most of the time the automatic camera change function does a good job in letting you see what's going on. Occasionally

manual adjustment is necessary though, to stop yourself from running off a cliff or jumping down a giant spiders throat. It's also important to look around carefully when trying to solve puzzles as the solution can be right under your nose without you easily realising it.

The animation of the characters is also top notch and one of the highlights of the game. Each different character has their own movements and their own place in the world, from the girl in the local bar who dances with you when you put money in the juke box to the garbage can snipers on Desert Island, and it all helps draw you in to the game designers reality. Some of you may be a bit overwhelmed by the cuteness of it all but I guess if you're a death or glory gamer you won't be buying this anyway.

Puzzles and problems

From an adventurers point of view any game lives or dies by the difficulty and nature of its' puzzles and the designers of Relentless 2 have managed to keep the balance they attained in the first title pretty well. It's important to approach situations using all your different states as

some things can only be done when you sneak or jump. The other thing to remember is that your magic ball has a different trajectory in every different state and sometimes you have to try each one to find what you need. When you're in aggressive mode your ball thingy flies straight and fast (good for fighting), when you're in sneaky mode it goes high and short (good for getting over walls and triggering switches) One annoying little cliché in the game is the structure of the quest itself.



Beware the scary-mask-door



"If I could talk to the animals..."



"Sure the houses are small, but they're cheap"

It's the too familiar "sure I know how to help you out but first do this for me" And then when you go to do whatever that was, you end up with someone else saying "sure I'll help you out with that but first..." It makes you want to be able to slap them around a little. The only other negative point to mention is the severe lack of variety in the character voices. All of them sound like they've been done by the same person putting on slightly different silly accents each time, and it does get a bit tedious after a while, but it's only a minor problem really.

All up I can say with confidence that cutesy adventure lovers everywhere will be overjoyed with Little Big Adventure 2 and should have lots of fun playing it!

George Soropos

84%

Category Adventure
Players 1
Publisher Activision
Price \$89.95
Rating TBA
Available Now

For Great graphics and animation together with bundles of charm and playability

Against Audio can be tiring with the same music and character voices carrying right through the game

Need P90, 16Mb RAM, 4X CD, Win 95 or DOS

Want P133, 8X CD



X-COM Apocalypse

It's heeere... For the next few months the streets will be free of socially-challenged nerdyfreaks (you know, me, you, everyone cool you know...), because they'll all be inside playing X-Com Apocalypse.



A huge and useful array of options, weaponry, tactics and technologies. Enough depth to keep the most anal gamer happy, as well as action a-plenty



Seen the sun come up once too many times whilst playing Civilisation 2? Did Master of Orion 2 transform you into a socially redundant Caffeine addict? If you are nodding your head at this point, feel welcomed into the Microprose "Oh crap, is that the sun already!" club. While X-COM Apocalypse is the latest in Microprose's blatant disregard for your healthy sleeping pattern, it is also number three in the popular X-COM UFO series. The first two X-COM games had

you managing a crack squad of kick arse people who's job it was to protect Earth from an insidious Alien invasion. X-COM Apocalypse puts you back in charge of a counter Alien insurgency unit and things are as hairy as ever.

In the city

This time around your X-COM organisation is guarding the Metropolis of Mega-Primus. It's a huge city densely packed with skyscrapers, freeways, hover cars and the occasional Dimensional Portal. These Portals are the entry point for an ever escalating alien force hell bent on taking control of Mega-Primus. Starting off with a small base located

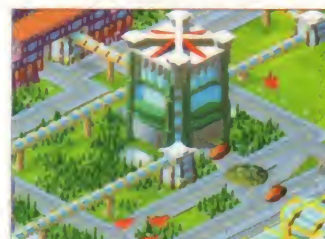
within the confines of the city, you must investigate and hamper the aliens at every turn. While kicking some alien arse is central to the theme, the beauty of Apocalypse is how extensive management of your team and it's resources plays such an important role. Scientific Research, weapon and vehicle purchasing are all important areas that require careful attention. You have to also play the role as Architect in determining the future needs of your base. For example building too many science labs might allow you to speed up your research, but might not allow room for that Alien Containment Facility that might be needed down the track.

Hiring and firing of staff, keeping your agents brimming with the latest weapons, researching that new Alien gizmo that you have acquired... there is so much to do.

A combat scenario editor is available that allows you to setup a single skirmish between different teams comprising of Aliens, X-COM Agents and even different security forces that originate from Mega-Primus. Great for practice. As a bonus Hotseat Play has been included so as to get your friends in on the action.



Sometimes blowing everything up can help flush out the enemy



Buildings can be blown up...with nasty consequences



Cool looking vehicles, and excellent level design



All of these management details avoid becoming a chore as they expand and change as the Alien threat becomes more intense.

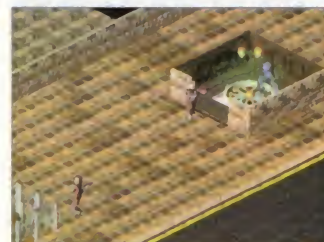
X-COM groupies were initially upset in hearing that defense of the entire world had been "Scaled down" to a city. The good news is that the city not only contains a large diversity of combat areas (cinemas, warehouses, police stations etc) but contains some interesting features that bring a new level of strategy to X-COM. You must continually monitor all of the Govt agencies, organised crime syndicates, religious cults and numerous other groups that co-exist within the city. Most groups will not have an affect on your operations one way or the other. Some are very important though and must be kept on side. Lacklustre performance in city

defense will have the ruling senate cut your funds. If the Aliens infiltrate the ranks of Megacorp, your weapons supply could be affected. Some groups such as the Cult of Sirius are Alien lovers from the beginning and will be hostile to your actions early on. This hostility can have you raiding their buildings and stealing equipment, or conducting a front on assault with your missile laden hover vehicles. Just watch out though, as for some reason the local constabulary don't often like missile attacks on civilian buildings.

Real-time combat

It's not long into the game and things turn nasty. The Aliens employ a few strategies in attacking the city. UFO assaults which require some good old air to air combat between your vehicles and the Alien's equally dangerous craft. This ship to ship

combat was a fairly simplistic affair in the previous X-COM games. This time around it's all real time, with missiles and beam weapons streaking across the city landscape. Buildings get caught in the crossfire (which can cause bad relations with the owners), and general havoc always ensues. Strategists need not fear, it's not a frantic mouse click-fest. There is a pause feature and



Play in either real-time or turn-based. Very cool



Just the kind of aircraft you need to pop down to the local 7-11 for a slurpee



review

These are only a few of the exotic inter-dimensional scum you shall meet. Keep in mind that the aliens seem to take over humans as well, trust no one...



Alien Infantry - Carries weapons and is the most humanoid of the Alien army. Standard grunt soldier.



The Brainsucker - Oh how you will learn to hate these cretins. They slither up to you at fast speed, attach to your troops and cause the victim to act irrationally. Acting irrationally and being armed with a mobile rocket launcher... it ain't pretty.

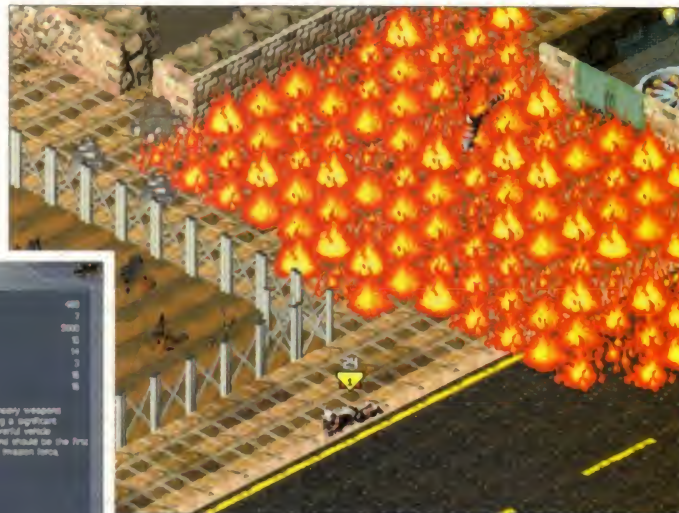


Spitter - Yes they have no head, and are very ugly. They compensate by having a close to medium range spit, that is predictably highly toxic.



Runner - Specialises in running straight for your squad and exploding. Stay clear of this guy, his method of hello can be deadly.

► you basically give your vehicles orders regarding their type of attack, and watch them carry it out. Soon enough though it's time to break out the weapon cabinet and respond to "Building Alien Alerts". This is where the "Bug Hunt" begins, be afraid... very afraid.



Let slip the dogs of war...and the odd incendiary grenade or five

...Or turn-based

There is the option

to play out your gun fests in real time, and it tends to play like a more complex version of Syndicate, but it's far removed from the classic X-COM style. Playing in turn based mode allows you to set up covering fire, sniper positions and generally more devious attack plans. The element of tension is not quite there in real time, but some may prefer its faster pace. It's purely a matter of taste, and kudos to the producers for giving us an option of playing with either turn based or real time formats.

Microprose have really delivered the goods with UFO Apocalypse. The near perfect balance of financial/base management and tactical combat seen in the earlier games has been maintained. The city setting works wonderfully as the ever changing politics adds a whole new playground for you to get involved in. There are so many features and strategies to Apocalypse that it is a continual learning experience. Your first few games will see you experimenting with different finance and research

strategies. Long term plans will continually be challenged as new situations are forever popping up. How do you deal with that new type of Alien Assault craft? What will be the consequences of the alien infiltration of your main weapons supplier? Will you take on the Organised Crime gangs, thus restricting their influence? A compelling strategy game that is solid all the way through.

Peter Sharpe

93%

Category	Strategy
Players	1
Publisher	Microprose
Price	\$89.95
Rating	TBA
Available	August

For Gameplay that has more strategic depth than the proverbial Pacific Ocean. Alien autopsies, hover cars, big guns and dimensional doors... what a great combination.

Against Keeping track of finances, weapons supplies, personnel etc can be occasionally overwhelming. The aliens look too "Blobby" and indistinctive.

Need 486DX/66, 16Mb RAM, Quad Speed CD-ROM, DOS 5.0

Want P90, 16Mb RAM



The same kind of interface as previous X-Coms, with plenty of additions



YOUR ADVERSARY HAS THREE THOUSAND
KNIGHTS, A THOUSAND HORSES, AND SEVEN
FORTIFIED CASTLES.

COLLECT THEM ALL.

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WARLORDS III: REIGN OF HEROES IN STORES THIS AUGUST
www.warlords3.com

CONSTRUCTOR

Ever wanted to be the landlord from hell? Then Constructor might be the one for you...

You might be excused from thinking that the God-sim genre has been pretty much exhausted. They've been around in heaps of different incarnations for ages now, and while they do tend to appeal to certain types of people (like me) they can start to look a little tired at times. Constructor, published by Acclaim, looks anything but tired in either concept, design, or feel, or anything else you'd care to mention. The graphics are slick and very cute, and the interface is simple yet functional with a good variety of options and menu functions. They're generally fairly labour-intensive games in this genre, however, and require a great deal of application from players. As a player, you're going to want a decent reward for all the time and effort you spend building up your empire, and in this case Constructor plays off in spades. It's a good 'un, let there be no doubt about that.

At its heart, Constructor is an empire building strategy sim where the aim is to control as much housing as possible whilst (and here's the good part) keeping your opposition occupied by sabotaging their buildings and intimidating their workers and tenants. I can remember playing a game of networked Transport Tycoon with a friend of mine a while ago, and while it was good fun building up an empire for a long long time, the best parts



While it's fun building up your residential empire, it's even more fun watching it all come crashing down.

where when we both got a little spiteful and started sabotaging each others facilities - he would start a train station, and I'd buy up all the land around it, wasting his money, time, and leaving him with heaps of stranded passengers waiting at his station who of course decided that they hated him. It was great fun...except of course when the retribution strike came and he did the same thing to me, that is. Anyway, my point is that being a bastard (or a bitch) is fun, and a personality trait that should be exercised in computer games at every available opportunity. The people who have constructed Constructor

know this, and have included a multitude of ways to screw with your competitors, either AI or flesh, which elevates the game from being 'good' to being 'bloody great fun'. As the game progresses, more and more 'undesirable' buildings become available to you. Once

built, they house people (or ghosts, or monsters, or deranged killer clowns, etc) that can be sent towards your unfortunate opposition to raise some hell when given the right cash incentive.

4 ways to play

There are four mission objectives available to you; financial conquest, world domination, ego mania, or universal utopia. The first requires you to make a certain amount of money in a certain amount of time (neither of which is specified, unfortunately), the second requires you to have property in every town on the map. Ego mania is where you build every type of building available (there's around fifty in total) culminating in a pyramid dedicated to your memory. The fourth and the hardest, universal utopia requires you to build every building in the game, have them all occupied and to have everyone in them happy -



An unnervingly quiet day in the 'burbs.

which isn't an easy task at all. No matter which option you choose, the tenants will be a fickle bunch. First of all, you start off with a couple of foremen, some workers, and two repairmen. After building your first building, the wood factory, with one of your foremen and his troop of men you'll be able to build some housing. Because it's early in the game, you're only allowed to build slum level housing, and only tenants one step above squatters will be available to you. After one house of each level one design has been built, it's time to move to the next level, but level two housing requires con-



From hovel to high-rise, build up your empire.



If things are running a little too smoothly for the competition, send a group of thugs their way to cause a little trouble.

crete, so you need to get the foreman and his gang to build a cement factory. Then there's the organisation of your tenants. Though you start off with a decent amount of money, it will run out fairly quickly and your tenants can either produce workers, tenants or pay rent. Paying rent improves your financial situation, but you need to have more workers to work in the factories, and tenants to live in your newly built houses, so it's a bit of a juggling act.

And if you think that sounds difficult, as the game progresses, more and more options become available. Apart from the four factories (wood, cement, bricks and steel) you're also going to have to build a gadget factory. This is where you can build computers, burglar alarms, storm shutters and plenty more. Computers allows for the children of the tenants to educate themselves better than their parents, so a level one tenant can produce level two offspring, moving up the social ladder. For the tenants to be in a 'productive' (nudge nudge wink wink) mood, they have to be happy, which means you'll

probably have to shell out for some home improvements, either in the form of improved bedrooms, toilets, lounge rooms, kitchens or fences, or even adding a tree or two in the backyard makes them happier as well. Being tenants though, they will gradually destroy your house, which means you'll need to have a repairman doing the rounds to keep up maintenance. So, you're trying to build bigger and better houses, with better and richer tenants, while producing enough workers to create workers and maintenance men as well as a next generation of tenants (they have a nasty habit of dying occasionally), while all the time you also need to watch your money situation - it's vital to keep a steady income to offset your outlay for the building of new houses and facilities.

The good bit - being a prick

Then, on top of all this, the nasties are one of the most important parts

of the game. As the game progresses and your buildings improve, you can choose from building a commune (for hippies), a pawn shop (for burglars), a ghost house (for, er, ghosts), a carbuncle (high rise housing project for thugs), an arcade park (for a demonic clown), a biker bar (for insane bikers), a DIY store (for a malicious Mr Fixit). These are without doubt some of the funniest, coolest, and best parts of Constructor. The thugs get my vote for the most hilarious undesirable elements in the game - you can send them to someones' house to throw a rave party...while the original occupants are still there. So off they trot, chanting 'oi! oi! oi!' along the way, and when they get there they just run amok, throwing garbage bins around and just generally destroying everything in their path. Great fun! Mr Fixit is pretty cool too, he pops around to an opposition owned house and 'fixes' the electricity, water or gas, which results in either the house burning down, getting swamped with water, or blowing up. Then again, the insane Biekie isn't bad either, one of your options is to send him over to an opposition building site and get him to scare off the workers there. He just saunters in to the site and then gives one big roar, and all the workers scatter - very amusing.

It's made by an English company, and all the character voices are done in English accents, right down to the repairman who, should you summon him, might respond with an aggrieved 'fookin' 'ell!'. The whole game, though, is great once everything is put together. It's got bucketloads of depth, it's very well balanced, is multiplayable, requires a great deal of strategic planning (I actually played it with no competition just to have a look, and even so it became so complicated I could hardly keep up), as well as bucketloads of humorous interludes which form a valid part of the game and are pretty bloody funny too. Simply, it's a very well conceived and produced game that will keep you coming back for more time after time - especially if you can find some people to multiplay with. Being a complete bastard has never been more fun.

Gareth Jones

84%

Category	Real Time Strategy Empire Building
Players	1-4
Publisher	Acclaim
Price	\$TBA
Rating	TBA
Available	Now

For Excellent combination of real time strategy with humour and depth of gameplay. Excellent graphics, plenty of replayability, and it's multi-player too!

Against Only the one city map is used, which degrades replayability a little. Could have done with a few more details about your status, and the AI cheats a little, too

Need 486 DX2/66, 8Mb RAM, DOS/Wing5

Want P100, 16Mb RAM



Every decent neighborhood needs a little mob influence...

SHADOWS OVER RIVA

Why are we so hard to please these days when it comes to RPGs?

Why is Shadows Over Riva suddenly looking so good? Read on...



Oh cool. Another RPG with semi-naked women. How very original

What do you look for in an RPG? Non-fans, presumably scared of unintelligible statistics and frightened off by hackneyed fantasy toss, would probably just look for the Exit. But I consider myself to be a fan of RPGs, and yet I'm equally disturbed by such tiresome D&D trappings that betray the dice and paper origins of the genre. Who cares about advancing secondary skill levels or encumbrance points when there could be ancient arte-

facts to discover, mystery and rumour to unravel, or back alley assassinations to perform? In other words, why do maths when you could be playing a GAME?

Yes, I love RPGs, but at the same time hate the way that so many of them contain everything I despise about the genre. Daggerfall, for instance, is undeniably a massive, beautifully presented and engrossing journey, but 99.99% of the people you meet have absolutely nothing to say and you have to do

stupid things like running everywhere to improve your running skill by a few points.

What's an RPG these days?

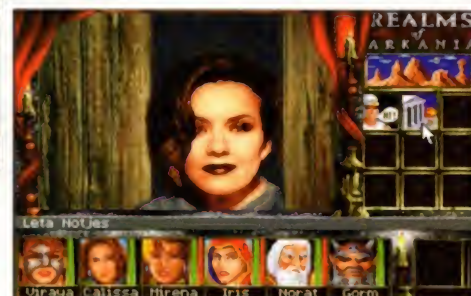
So what do I look for in an RPG? Basically, I want to feel as if I (meaning my character/s) am actually living in the game world, rather than merely exploiting a few routines in a game engine. I want to interact with my characters; I want them to interact with each other and with other people; I want those other people interacting with more other people! I want a sense of history about the game world and my characters to share that sense, even having a history of their own within the world. I want the game to appear to have a life continuing beyond my participation with it. And I don't want to know that Rk'Bellxi the Wizard can't cast Paralyse because his Spell Points multiplied by Intuition divided by Luck isn't greater than the target's Magical Resistance, or something! Is this too much to ask?

Possibly it is, for the time being

at least. However, Shadows Over Riva (you knew I'd come to it eventually) nearly gets it right. Riva is the third in the Realms of Arkania series and, after you had reunited the tribes of Dwarves and Elves in previous games, continues the tale of their great war against the fiendish, malformed Orcs.

Intelligent A.I.

Throughout your adventures in Riva you control a party (or two parties, if you split them up) of up to seven characters. Unlike so many other titles, in which multiple char-



acters are little more than ciphers for a few extra skills (the thief, the warrior, the magician, etc), here they seem more like genuine people. They chat amongst themselves as you wander around, commenting on some of the features you encounter. They do things in different ways, fully utilising their own unique talents. For instance, when I found and attempted to open a locked tomb in the city cemetery,



Daggerfall without the dice, and interesting conversations



Viraya



Turn-based, grid combat leaves a little to be desired

Calissa tried to pick the lock, while Gorm pulled out a crowbar to smash it (sadly it just went "Klang!"), before Norat recognised it as the protected tomb of a dead Elven king and thought it best to quickly leave. Each character's personality is developed further into the game, particularly thanks to the cut-scenes if you stick with the ready-made characters.

Speaking of cut-scenes, the graphics in Riva are fairly sophisticated. The lo-res first-person 3D view, which normally takes up about a third of the screen (although this can be switched to full-screen), is quite good, but not on a par with Daggerfall. This is especially apparent when you realise that you never see anybody else walking around.

All people and monsters are "stumbled upon", seemingly appearing from out of nowhere. It can occasionally be a bit disconcerting, but the wide variety of people you do actually meet more than makes up for any failings in their visual representation. Again, like the characters in your party, these people have real personality, a fact emphasised by the way they don't rely upon stock replies in conversations. Sure, they often say similar things, but always in a new way. And everyone has something to talk about, sometimes too much.

Novice Pride

One thing there isn't too much of, however, is the dreaded statistics. Obviously it's all there if you

want it, if that sort of thing turns you on. But for most gamers, though, the Novice mode is the way to play. It's not Easy, it just means you don't have to concern yourself with the more tedious aspects of character "management". In other words, it doesn't so much reduce the level of difficulty as the level of anality.

Combat is slightly disappointing. It resurrects that ancient grid, turn-based system which I always find a bit fiddly. Here it's worse, as menus and character boxes ludicrously obscure the play area. Essentially it's all pretty basic stuff, and not all that different to the first Ultima games when you think about it. I reckon

only Heroes of Might & Magic has offered a reasonable method for handling multi-character combat. Maybe a real-time Warcraft-esque style might be used for the next game, eh?

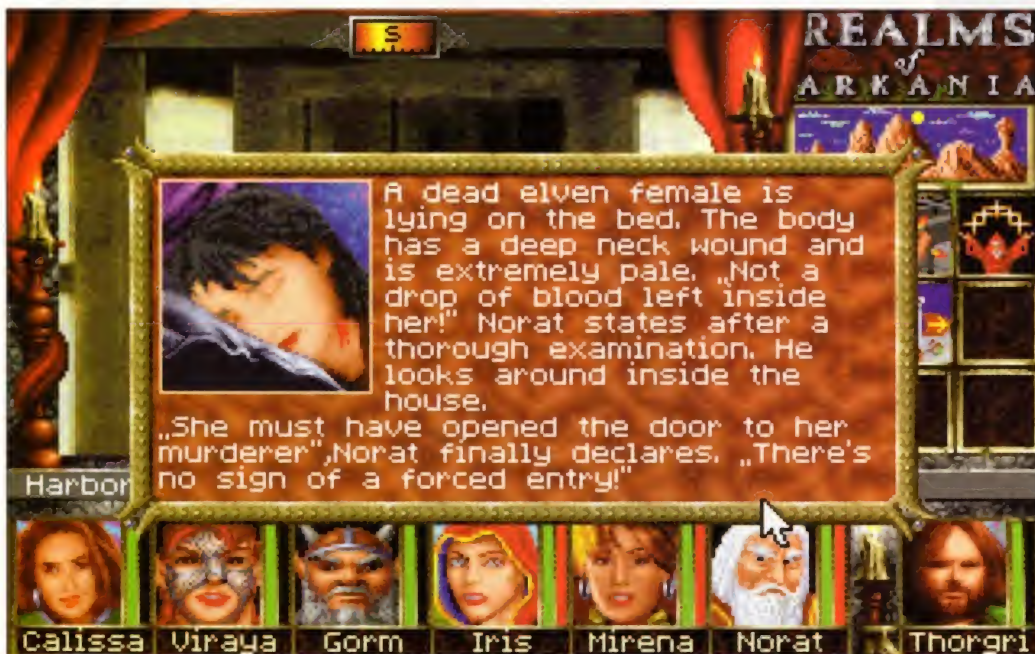
Also worthy of mention is the truly excellent map. It's split into two boxes; one shows the whole area, while the other displays a



detailed, localised region. You can put a little marker on the local map and make extensive notes for any place of note. Thus, when you move the mouse over the marker, the notes appear instead of the area map. Really, it's quite the cleverest thing I've seen in a long time.

Shadows Over Riva serves up a cracking good adventure. Probably there are still too many unnecessary numbers for my liking, but overall this is tough to fault.

David Wildgoose



Look out for the "A touch of Norat" TV detective series coming soon to 7 on Saturday nights

84%

Category RPG
Players 1
Publisher Sir-Tech
Price \$99.95
Rating M15
Available Now

For Great character interaction and conversation. Easy control system. Intriguing plot.

Against The combat is a let-down. Statistics still lurk in the darkest corners.

Need 486/33, 8Mb RAM, 2xCD, 60Mb HD

Want P60, 16Mb RAM

OBSIDIAN

For those that myst out on the most overrated game of all time comes this far superior clone. Enjoy.



Call me old-fashioned if you like, but when it comes to adventure games I love a good story. Sure, the puzzles are important, but not, I would argue, as important as the plot. Ideally, the plot should create them along the way. Designers ought to be extracting puzzles from the story itself, not merely throwing in, as so often happens, these half-hearted abstract efforts they thought up earlier. And sure, an effective interface is necessary as well, but yet even the most torturous (within reason, of course) control can be abided if the narrative is gripping enough. Equally essential are the graphics. Now I'm not so silly to suggest that the graphics don't matter - obviously they do. It's more that there always needs to be

a story that's worth bringing to visual life. Pretty pictures on their own are never satisfying or even particularly interesting.

No plot, no worries!

Basically, for an adventure game to be enjoyable and evocative (since, clearly, you need to feel part of the gameworld), then there simply must be something to evoke. And that means plot, plot, and more plot. Everything comes from the plot, it's a fact. But the plot isn't everything, natch. Which is where Obsidian comes in. Obsidian - you're just never going to believe this, I can tell - doesn't

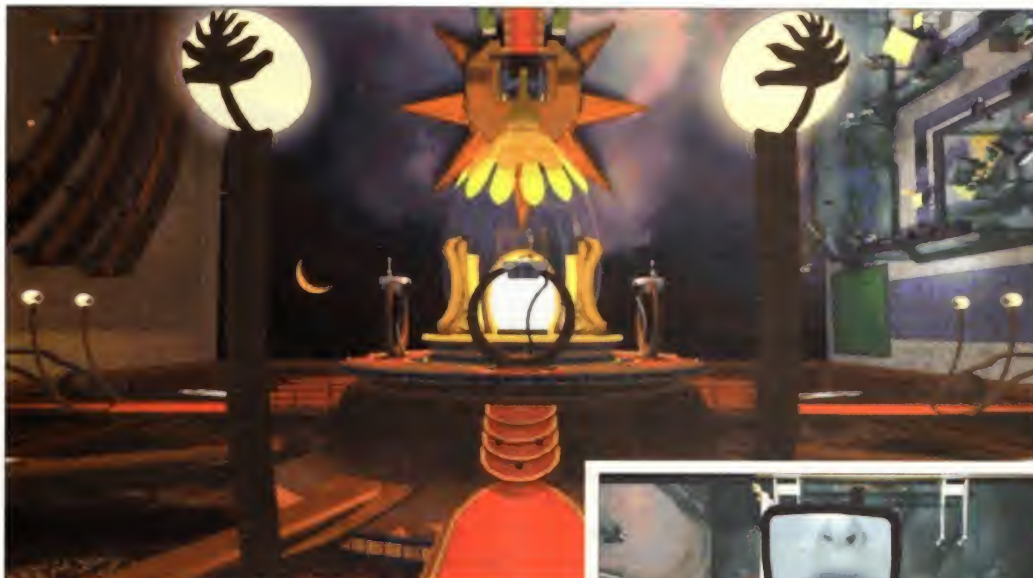
really have a plot. Damn!

Nevertheless, I was surprised by just how fascinated I became with Obsidian's extremely strange world during the few days I spent in its company. Instead of a plot, you see, what this defiantly Myst-inspired game has is more of what you might term an "atmosphere", or what I would term a "mood". It's a mood that unsettles almost

immediately as you start the game in a deserted camping ground. You are Lilah Taylor, some sort of research scientist specialising in nanotechnology (but that's not important right now), and your husband, Max, has gone for an early morning walk in the woods. A few days previously, the two of you discovered a curious, glassy, obsidian rock, like "black ice", and



All the twisted surreal wierdness of Myst...but it's actually good



Interior decor from an alternate reality. Man



Wo-oh what a feeling, dancin' on the ceiling

in the days hence it has begun to grow and grow, forming a mountainous outcropping that casts an ominous shadow all around.

Presently, there's a scream from in the distance - it's Max! Rushing off to assist you soon find yourself trapped inside the Obsidian, still trying to locate Max, and now faced with some of the most bizarre sights seen in a computer game since the early days of the Commodore 64. The latter is the significant part - the bizarreness, not the C64, that is. Quickly, you'll forget all about finding Max (he is only your husband, after all) and switch your attention to exploring this utterly bonkers place. If there is a "quantity theory of insanity", as Will Self proposed, then the rest of the world must be sanity exemplified, because, to be honest, all the madness is encased within these black ice walls.

Entering the first room, you will probably notice that it is a rather large rectangular prism, and that the floor, all the walls, even the ceiling, have plenty of odd-looking objects protruding from them. You'll also find yourself in a lift and that the only place to go is down. Stepping

out of the lift you approach the Information Desk, behind which is a robot with a monitor for a head. Behind the robot is a statue of Atlas (or is it Ahernia?) holding the entire world on his shoulders. Turning left, you spy a walkway spanning a huge row of bookshelves set into the floor. You lift a book from the shelf and it falls to the... wall. You pick another and it falls again to the wall on your right. Hmm. You walk to the end of the bridge and the entire rooms rotates so that you are now standing upon what used to be the wall, but is now the floor - and you have a pile of books at your feet. And the bookshelf is now the wall.

There be puzzles, milord

Get it? By stepping onto the various sloped walkways around the room, you can make any wall you wish become the floor. Discovering the right



way to orient the room to enable you to reach certain sections of the structure comprises a central part of the puzzles in the game. For instance, in one bit there are some golden hand-railings circumferencing the area, which seem like little more than decoration. Tip the room on its side, however, and they become a vital ladder that allows you to scale some scary heights to pick up a precious clue.

Some further examples of insanity. There's the Office of Psychiatric Assessment where I was asked the question, "Does this picture [of a cute dog] remind me of, a) shiny blades of grass covered in the blood of a strangled witch, or b) a freshly baked scone laced with poison frosting". Or the sarcastic type-writer-computer (like in "The



Understanding Obsidian step 1: take lots of drugs

Plus

Bid a fond farewell to the Rocket Science people (for they created this game, but shall make no more) at www.7thlevel.com

Naked Lunch") with whom I played a few games. He won't play Hangman because it's too dumb, but he will play Hide And Seek, of all things. Foolishly, I accepted, intrigued as to how a computer could play such an obviously physical game. The cheeky bastard

asked me to hide then press Enter when I was ready for him to find me. Sadly, it dawned on me fractionally too late that all he had to say was "You're right there!". Which he did, gleefully. My humiliation complete, I returned to the main foyer for a game of Breakout. Which I won, ha!

Obsidian is a tremendously peculiar game that has intrigued me no end. I don't know what it is, but I think I like it.

David Wildgoose

81%

Category	Puzzle/Adventure
Players	1
Publisher	SegaSoft
Price	\$TBA
Rating	TBA
Available	Now

For Games don't come stranger than this. I believe that is a good thing.

Against Despite being spread across 5 CDs, it is apparently a little on the short side.

Need P90, 16Mb RAM, 4xCD, Win95, 16Bit Video

Want A broad and willing imagination.

G-NOME

Oh look, another Mechwarrior clone...

Snap out of it Reader, this one is actually quite good.

I always thought that a HAWC (Heavy Armour Weapons Chassis) would be a wonderful thing to take on a Sunday drive. You know, polish the thing with plenty of turtle wax, buff and shine, whack on your best frock and take to some barren landscape to noisily roam where many have roamed before. But the problem see, is that there is a war on, and these machines were primarily designed for battle, not cruising. And soon as you take a left at that ravine you're bound to get some heavies on you. Others speak of politics, treachery and the eternal chase for wealth as the core of this war. I used to serve the military, but opened up a quaint little establishment called the "Left-4 Dead Café" after a little incident during my last mission. You see, I was deserted - left for dead. UIA special forces want me back for my expertise and pure skill to tip the balance of the war in their favour. I, on the other hand, joined

this war so people like me can take a cruise in a four-storey war machine to the local spaceport for some dim-sum in peace. Either that or I'm the strong and silent type that does things because there's plenty of biffa involved (a lunatic). Maybe I'm in it for both reasons.

Brilliant missions

G-NOME is one of the many "missed the first boat, but are catching up with this nice looking speed-boat" titles that come after the first big hits in a genre - ie. games that are released a year or two later, that lack the impact of the original, yet contain features and gameplay that could almost put their predecessors to shame. It's happened and it'll happen again. G-NOME is a straight out mech game in the vein of Mechwarrior, with quite a few subtle, yet satisfying differences. First off, there's a decent plot that gets you involved and keeps you going - not spectacular, but then again not as

predictable as some "other" efforts (I really tried not to mention Wing Commander here). Secondly, there's plenty of big mech things to commandeer - just over twenty in all - each with a different configuration of guns and missiles. Thirdly, the

mission structure in G-NOME is beautifully thought out, and shows that G-NOME team really worked at it to push the mech game genre out of the "patrol, destroy mech, destroy base, patrol" routine that makes the norm. Rather than being confined to your HAWC, you can jump out of it at will, to either shoot it out on foot, enter particular buildings, or even the enemy HAWC's themselves. For example, The third mission calls for you to sneak into a HAWC motor pool building on foot and obtain the IFF code (a security code) so you can join an enemy supply convoy undetected which takes you directly into the enemy stronghold which happens to be your primary target. Others require the take over of gun towers, the lowering of drawbridges and the like to progress. The missions are also fairly flexible.

Dodgy A.I.

The graphics, (optimized for MMX) are a treat, even if you are still using a fairly dated Pentium. The mechs are beautifully rendered, as are buildings and installations. The music is also of a high standard. The HAWC's in G-NOME, like in many mech games, are a dog to control though. You can configure the keyboard to your hearts content, though you're really going to have to invest in a joystick with a hat to have a chance in the game (and to better enjoy it). The only other real blemish is a rather disappointing AI at times. In the first mission, I vanquished the other HAWC by spinning on the spot and blasting at it as it ran circles around me. The second mission required that I lower the drawbridge to enter a hot zone. Entering it all guns a blazing, you have a challenge. I tried standing on the bridge (within radar range of the enemy) and blasting each target one by one. This worked. Stationary HAWCs would ignore the ruckus and leave me be. Sigh.

All in all, an impressive mech title with some interesting features and a fresh approach, though let down in the AI department. Skewed more to the action end of the scale.

March Stepnik



Jungle Book meets Mechwarrior 2

+ Plus

<http://www.7thlevel.com/gnome/index7.htm>

Live chatroom, message boards, hints and tips and more...



80%

Category	Combat Mech Sim
Players	1-8
Publisher	7th Level
Price	\$89.95
Rating	M
Available	Now

For Mission structure, graphics, sound and plot. Multiplayer provides a much more balanced challenge.

Against Artificial Intelligence, or lack of. HAWC's aren't customizable - what you see is what you get.

Need P90, 16 MB RAM, Win 95, 4XCD

Want P166, 32MB RAM, 6XCD, MMX



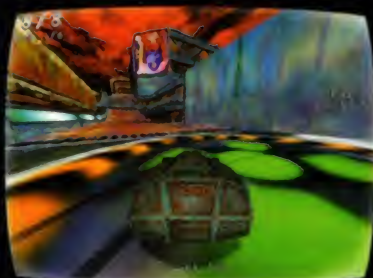
G-Nome. The game of garden ornament destruction. Maybe



YOU WILL NEVER PLAY ALONE AGAIN!



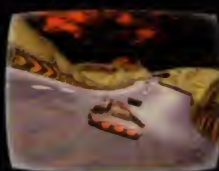
David, Paris



Pablo, Barcelona



Michael, San Francisco



Penny, London



Kate, Sydney

POD is not only the fastest, meanest racing game ever, it's also the first game to harness the incredible gameplay and graphics potential of MMX and 3DFX. It's also the only game that allows you to play opponents simultaneously using the Internet, LAN and split screen. And if all that doesn't set your pulse

racing, there's more. In the future new cars, tracks and tournaments will become available for all POD players, downloadable from the net along with ghost cars and global competitions. No wonder we reckon POD will be the first game you'll never grow tired of. Experience POD on line: <http://www.ubisoft.com>



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Tom Clancy SSN

Dear god no!!! Not another sub game... Don't they know these things never work?!! Hang on, what's going on??? It can't be? Noooo I'm... I'm having... Fun!

SSN is based upon a fictional, but not unrealistic, crisis in the Spratly Islands in the shallow South China Sea. You are the Captain of an Improved Los Angeles Class SSN (Nuclear powered fast Attack Submarine) the USS Cheyenne.

The game commences with CNN type news coverage that aptly sets the scene. Mission Briefings are professional and cover Situation (Enemy and Friendly), Intelligence Reports, Mission, a set series of waypoints, then finally weapons loadout. Once you are in the game proper, it's a real surprise! No, you are not within the sub's hull interacting with all the crew by clicking

on Con, Engine Room, Map etc like you do in conventional sub sims; instead you view the sub from behind, with all the master systems just a key stroke away through MFD type displays. I disliked this at first, but soon found that it enabled me to be 100% situationally aware, just as you are within the cockpit of a flight sim! Just look at some of the screen shots!

Arcade pretend controls

I found it genuinely hard to rate Gameplay for this game; many of the complex weapons systems are available to you, but they are presented in a simple fashion. Enter the debate of "how real do you like it?" For instance, the Sonar display is not realistic, it's really a plotting board where you are advised of underwater, surface or airborne anomalies, their range, speed etc and finally the crew identify the track. I found that while the crew were usually quick to id a target,



there were times when obviously I had the "second eleven" in the sonar room because it took them ages to identify the anomaly off the starboard bow that was 1000m away and moving at 20 knots!

This is a no no for the realism die hards (like me), but fill the sonar (come plotting board) with four or five or your Mk 48s fired at two or more targets, some noisemakers behind you, a MOSS (Mobile Submarine Simulator) and numerous enemy torpedoes all pinging at you and wow! There are some tense moments!

Captain! There's seamen everywhere!

Tactically, you can gain much pleasure from SSN. Identify a target, stalk it, move to its baffles or position yourself behind an underwater mountain for an ambush, and then engage. Both you and the enemy make use of thermoclines (layers of water with differing temperatures), so beware or the hunter may become the hunted. Torpedoes are accurately simulated, if they miss, they will circle and watch out because if they re-acquire its time

to launch a noise-maker and make a break for it!

SSN has 15 missions in total, and this is a real downer. The missions ranged from patrolling a specified area to escorting the USS Independence Carrier Battle Group, or moving to a pre-determined waypoint to launch Tomahawk Cruise Missiles. I expected more from a game so closely linked to Tom Clancy.

Maj Ian Lindgren



Realism blended with fun action elements. It's a good 'un

+ Plus

Additional Reading. I recommend reading Tom Clancy's SSN - Strategies for Submarine Warfare - Harper Collins RRP \$22.95. This book sets the scene for this game, and each of the missions are accurately described in full "Clancy" gusto. It's kind of a cheat book for the game!



"Gunner! Target that whale behind us, you need the practice. Navigator, scan for Greenpeace vessels"

75%

Category	Submarine Sim
Players	1
Publisher	Simon & Shuster
Price	\$69.95
Rating	M
Available	Now

For A simple control interface, combined with 100% situational awareness and realistic views of the undersea battle environment make this an exciting game.

Against Only 15 missions is woeful by today's standards! The game will provide great entertainment for two weeks, and then you'll probably scrub it from the HDD.

Need Pentium 60 with 8 MB RAM and Windows 95

Want Pentium 120, 16 MB RAM

HELICOPS

Style, irresistible Manga graphics, truly original and FUN mission design plus cut scenes and an intro that'll really impress.



Excellent missions, and cool manga graphics (and people with silly hats)



esting. You could describe it as a cross between an action-packed arcade shooter and a full-on helicopter combat sim. The arcade shooter aspect is apparent as a result of the great number of enemies that are blazing about to trying to bring you down, as well as the brightly coloured visuals and the

many power ups (like hyper-speed, invincibility, rapid fire to name a few of the full 14) present to help balance the power your way. On the combat sim side, the control of your helicopter is modeled very much on the chopper sim. The game is also structured much like a combat sim in that you have certain objectives to meet per mission to advance to the next. To top it off, the gameplay area is 3D and the overall engine (with some help from the graphics) imparts the feeling that you are playing a flight sim of old. In the end though, it is definitely weighted more to the combat side of things.

Perfect missions

5 HeliCops and 5 helicopters make up the players arsenal. Each helicopter has a different mix of speed, manoeuvre-

bility and armament, and each HeliCop (these also represent the mission "campaigns") will handle these differently. Apparently choosing the right chopper for your pilot is vital, though I found such matching not entirely necessary. The missions in HeliCops is the games ultimate strength. Neo Tokyo (where HC is set), being the urban jungle it is, has plenty of differently themed areas to play around in. First mission takes you to a coastal shipyard area, while others are set amongst sky-scrapers, sports stadiums and even inside these buildings. The objectives are intelligent, well thought out and interesting, and tie in with the overall plot nicely. How's this for a mission description? - "Pilot through the maze of Power Conduits under Neo Tokyo Tower. Locate and enter the Master I/O port at the tower to enter the CyberScape". These will please sci-fi junkies immensely.

So how does this combination of arcade and sim scrub up after hours of relentless gameplay? The sim flavour spiced heavily with arcade is interesting, and will hold your attention if you like shooters. Those wanting a hassle free blast-a-thon will be disappointed, as HeliCops requires some effort to master the controls (advice: get a joystick with a directional hat) and more than a bit of thought and strategy. Nothing groundbreaking though.

March Stepnik



Bizarre evil empire logo

Plus

<http://www.7thlevel.com/games/helicops/index.htm>



79%

Category Shooter
Players 1-Network
Publisher Dataflow/7thLevel
Price \$59-95
Rating M
Available Now

For Great missions, interesting landscapes, plenty of action

Against You'll need a third leg to be able to control the copters effectively, and the pace of the action can get a little rough, resulting in the use of the "hold down fire the whole way through" technique.

Need P100, 8MB RAM Win 95, 4xCD.

Want P166, 32MB RAM, Joystick with HAT.



5 helicopters, and 5 helicopters to chose from

Action orientation

HeliCops' basic gameplay is inter-

CHESS WARS

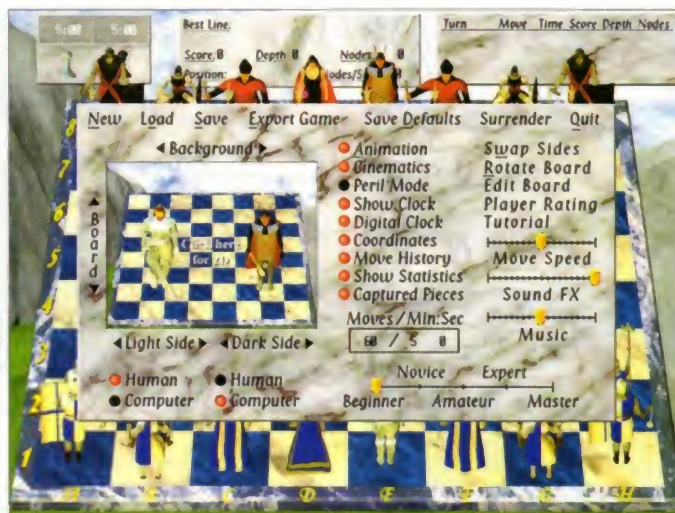
Disable the appalling FMV sequences and you're left with one excellent chess game.

There are only a certain number of ways to win a game of chess. Doubtless it will one day be conceivable that a computer can be programmed with all the combinations of winning games stored within, so as the human player makes their moves the computer can simply eliminate various possibilities until it is reduced to the final winning move. Simply, this computer is no "paranoid android", it will just not know how to lose.

Unstoppable monolith

I don't know about you, but I find that a little bit daunting. I mean, that dodgy IBM - a machine that is surely no match for the unstoppable, single-minded monolith I imagined in the previous paragraph - was enough to beat a clearly rattled Gary Kasparov. And being no chess grandmaster myself, I was humbled every time by this Chess Wars beast.

Okay, that's not strictly true. The first game I played was on the Beginner setting, the lowest difficulty level I could discover. And I won, without cheating, without using the "Undo", the "Hint" or anything. Confidence suitably boosted, I recklessly pumped the difficulty up to Novice (crazy, I know) and... was soundly thrashed



each time. On one particularly pathetic occasion I managed to disgrace myself by losing inside four moves. I'm not at all ashamed to admit that either. This, I reckon, is a damn good, and damn clever, chess simulation.

There is an excellent tutorial that is useful for the inexperienced and expert alike. There is an astoundingly large library (thousands of them!) of historically accurate re-enactments of classic chess games for you to study and practice against. There are over a hundred different of styles of play (from the chess greats like the aforementioned Kasparov) with

which to match your wits. The presentation is a bit clunky (the menus and so forth are a little poorly done), but the 3D boards look beautiful, all hi-res SVGA with varied sets of pieces and backdrops. For the traditionalists, you can also play on a simplified 2D board if you wish. Apparently, though I did not have the resources nor the opportunity to test it out, Chess Wars will regularly beat that other highly-regarded chess sim, Chessmaster 4000, on a P90. That must be good, then. I figure from this that the speed of your machine does make a significant difference to the ability of the program.

Hey, I might have done better using my old 486!

Oh no! FMV!

Okay, up until now I have deliberately avoided mentioning the one feature of Chess Wars that really sets it apart from all other chess games. That is, hideously embarrassing full motion video battle scenes. Remember Battle Chess? Well, this is similar, but much much worse. When a piece is taken, the game awkwardly cuts to a video clip of some hapless



Ha ha ha hee hee ha ha. I am Ivan the destroyer in my padded kitchen apron. Ha ha ha

bloke in a suit of armour, for example, being ambushed next to a couple of trees by some other blokes in knight costumes when a woman in a tight dress and funny hair steps in to kill the first bloke with a magic lightning bolt. It's not that these sequences are badly done, it's just that they are so pointlessly and irredeemably stupid and unnecessary that everyone who plays this game will instantly switch them off, leaving me wondering why on earth ArtData bothered in the first place. At least the fights in Battle Chess appeared in the context of the game. Oh well.

David Wildgoose



What it all boils down to is a chess game, and a good one at that

70%

Category	Chess. Obviously
Players	1-2
Publisher	ArtData Interactive
Price	\$TBA
Rating	G
Available	Now

For A good solid chess game. 85% for the chess part

Against 5% for the awful, intrusive FMV.

Need 486DX/50, 8Mb RAM, 2xCD

Want Pentium, 16Mb RAM

ROCKET JOCKEY

It's different, innovative in a natural progression kind of way and it's pretty cool fun for a while...

Most action games have a "Politically Incorrect" activity that always brings a smile to the face. Seeing an enemy explode into "Gibs" by the Quad Powered Shotgun in Quake. Playing Multi-player Hexen and transforming your mate into a flying pig, a memorable moment if there ever was one. Along comes Rocket Jockey which if nothing else is brimming with numerous soul warming moments. Being dragged along the ground behind high speed rockets, jockeying your rocket at full speed only to hit a wall, resulting in your body being flipped into a brick wall.



Yeehaa! Lasso them poles pardner!

Take one jet engine...

Take your garden variety rocket engine, attach a saddle and handlebars and there you have it, a sort of rocket "Hover" bike. As any Rocket Scientist will quickly point out, rockets don't turn particularly well even when equipped with handlebars. In light of this the vehicles on offer here come stocked with metal cables that can

be propelled out from either side of the bike. Each arena that you compete in has large poles littered around strategically. To turn your bike, you simply shoot out your cable and grab a pole, then rely upon the laws of physics to spin you around. Releasing the cable at the right time, should see you happily speeding off in the desired direction. As you've probably guessed these cables also double as your weapon. This is the main flavouring of the game, as you aim your cable towards riders and their steeds mostly ending with the enjoyable separation of Jockey and vehicle.

All of this mayhem takes place in three sports all with differing aims. Rocket Ball has you pelting around different shaped fields attempting to cable balls into goal nets. Rocket Racing demands accuracy as you have to pass through checkpoint gates while aiming for the finish line. The final game, Rocket

War is a good old fashioned death-match. You get points for damaging your opponents, the more visually spectacular the crash the more points you get.

Cable latching trickery

In the interests of variety, winning each round has you advancing to the next level. This gives you access to an increasing amount of power-ups that range from giving you on field stealth ability to upgrading your cable with an explosive war-head. I enjoyed latching onto a bomb, swinging it around and releasing it for a well timed explosion towards a fellow Jockey. Another one of those "Bring a smile to your face" moments.

Riding rockets, catapulting people and bombs around and



Remember how Wile E. Coyote always tried to do this? He crashed, and so will you

generally causing havoc should be a winner, but Rocket Jockey doesn't quite get there. Early on you will spend most of your time crashing into and bouncing off walls. While this is all part of the game, I often wished for a big area to really wind the speed up without the constant bump and bruising of wall hitting. Winning is required to advance through the levels, so be prepared to spend a long time on some of the earlier sections of the game.

On a technical note, I would not recommend any gamers attempting Rocket Jockey with only 16Mb of RAM on board, unless you take up a new hobby of watching your disk drive thrash around mid game. It's quite surprising that a game with pretty average graphics has quite high system requirements. On a P150 the frame rate wasn't that good and the necessary feeling of speed was only half way there.



Speed, skill & killing - sounds good...but it's only OK

Rocket Jockey is the usual mixed bag that makes up many of a "nearly there" game. Great concept and some good features being balanced with stodgy graphics and in game frustrations.

Peter Sharpe

68%

Category Action
Players 1-6
Publisher Segasoft
Price STBA
Rating TBA
Available Now

For Multiple events and lots of Rocket power-ups offer a good scope of variety. Pulp Fiction type soundtrack, great stuff.

Against Restricted to LAN play, no modem option. Difficult victory conditions can see you stuck on early levels far too long.

Need P90, 16Mb RAM, WIN95

Want P166, 32Mb RAM

+ Plus

www.segasoft.com - The advertised LAN play is not available out of the box. Cruise to the website and grab the patch.



Battleground 7: Bull Run

CATEGORY Historical strategy war game

PLAYERS 1-2

PUBLISHER Talonsoft

PRICE \$TBA

RATING G8+

AVAILABLE Now

NEED 486DX/2/66, 2xCD, 8Mb RAM

WANT P133, 4xCD, 32Mb RAM

overall

75%

Nothing all that different from others in the series, save for the scenario - and that's a big plus. Another very good game from Talonsoft.

Bull Run is a re-enactment of the American Civil War during the period from July 1861 through to September 1862, and gives you the opportunity to take part in the first and second battle of Bull Run, outside the Virginian town of Manassas. Also included are a couple of battles fought just previously to the Bull Run scenario as well.

The battles are where General Thomas Jackson got the name Stonewall, so named because... well because he stopped his opposition from getting past, not unlike the qualities of a large stone wall. The game itself doesn't deviate all that

much from the previous Battleground setup, with all the options and views pretty much intact. Even for veterans of the series, it is recommended that you read the manual thoroughly and keep it close to hand whilst playing, because there are really a lot of rules to take into account, as well as a few specific additions for Bull Run itself. It's a rewarding game though and while someone just jumping in and mucking about with units might become discouraged easily, with a bit of application on the part of the player these games become an interesting and involving experience.

I was a little taken aback when I first started both Bull Run and Napoleon, because it just looked like such a huge task to take on. After a lit-



Hex & Violence! With Bulls, apparently

tle while (and a couple of false starts), I started to really get into the experience. The look of the game is as polished as the others in the series, and once you get used to the rhythm of the game, it's great fun as well as a deep and serious simulation. The only downside is that unless you have a powerful processor, CD-Rom, and video card you will experience a bit of a wait while the computer makes its moves or whilst you change viewing areas. Other than that, it's another great, fun, and hard strategy simulation of a historical event.

Gareth Jones



Battleground 6: Napoleon in Russia

CATEGORY Historical strategy war sim

PLAYERS 1-2

PUBLISHER Talonsoft

PRICE \$TBA

RATING G8+

AVAILABLE Now

NEED 486DX/2/66, 2xCD, 8Mb RAM

WANT P133, 4xCD, 32Mb RAM

overall

75%

Another in an excellent series, with good graphics, truckloads of depth and plenty of playability.



"Not tonight Josephine. Ah am, 'ow you say, too busy with le strategie game"

The sixth in the acclaimed (by us, at least) Battleground series from Talonsoft, Napoleon in Russia lives up to the high standard set by the previous releases, and for hard core strategy buffs it's another epic scenario to keep you amused for the months to come.

The scenario follows Napoleon's 'greatest invasion' as he trotted off to Russia with a few thousand friends armed to the teeth and baying for Russki blood. The Russkies hadn't been faring all that well, and had retreated almost as far as

Moscow when Tsar Alexander decided to turn and face the enemy in a last desperate battle, and dubbed the battle of Borodino.

Yup, that's the same battle of Borodino featured in Tolstoy's epic 'War and Peace', and anyone with the temerity to attempt to read a novel of that size and scope will be

right at home with the Battleground series of games. They are huge, with over 20 full scale scenarios to choose from. The scenario maps are huge too, it took me a couple of playing hours just to get my troops into position, with only a couple of shots fired. Even though the game is hugely detailed with a multitude of options and strategic manoeuvres available, it's still fairly easy to get into. It's not the kind of game

you can just jump into and muck around in for a little while however. It's a serious simulation, and to complete the scenarios takes a hell of a lot of application. Thankfully, the AI will step in and perform some of your commands automatically, like the direction the troops face and other small details if you want it to, and as far as I could tell the AI performed these tasks adequately, as well as being an intelligent opponent. With multiplayer capabilities as well as the AI to play against, for people with a lot of time on their hands and a long concentration span this is another great sim from Talonsoft.

Gareth Jones



Battleship

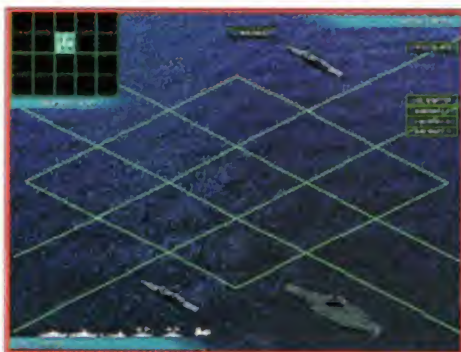


Slightly prettier than white & red plastic pegs

It used to be a nice and simple game, perfect for those rainy Sunday afternoons of my childhood. A couple of minutes to understand how to play, and then it was just luck really, but a good fun game nonetheless. However, Hasbro have decided that there was life in the concept yet, and have made it into a computer game that's so much more than it was before, though as to whether that's such a good thing is up to you to decide. For a start you can forget all about a turn based system, in Hasbro's Battleship it's a real time free for all. And that's

just the start of the enhancements, your fleet is now mobile and moves around an ocean to defend and attack up to four other opponents. Weapons have been enhanced as well, with a limited number of different varieties such as cruise missiles, torpedoes, cannons, and plenty

of others. The deal is that different weapons will reap different results depending upon how well you're seeing your target...because of



such things as radar, or an AWACS plane. Yup, Battleship has gone high tech, and Hasbro have produced a game that's not only more technical than the board game but prettier as well. Fire off a missile and you'll see a FMV sequence of a missile firing from your ship, and the resultant effect as well, either a miss and a splash into empty water or a hit with an explosion on the type of ship you've targeted. Along with this is the variety of mission available, with convoy escorts, island attacks, sub hunts and others all making for a fairly deep and complex game. In fact, apart from the name

it's actually almost nothing like the original board game. It looks good, has plenty of depth, and while it isn't the easiest game to master it's quite playable and a commendable effort. Just don't expect it to bring back memories of your childhood...

Gareth Jones

CATEGORY Real time strategy

PLAYERS 1-4

PUBLISHER Hasbro Interactive

PRICE STBA

RATING G

AVAILABLE Now

NEED 486/66, Win '95, 2 X CD, 8MB RAM, 1Mb video card

WANT P75, 4 X CD, 16MB RAM, 2Mb Video

overall

71%

So many new features added that it's nothing like the original. Good fun to play, multi-playable, and plenty of depth.

Jet Fighter III Enhanced

Jet Fighter III received a mixed reception when it was first released, the opinion was basically "great game but it's too slow". Even on a P200 cranking the graphics resolution past 320X200 resulted in an unplayable game. But with the promised 3D and MMX support now available via a patch download, those of you who wrote the game off might want to take a second look. This new expansion pack from Mission Studios is another reason to do just that.

JF3's 'Enhanced CampaignCD' adds over five million square miles of scenery to the game covering two new theatres of operations - Alaska and the Korean

peninsula. These two areas are covered by the two new campaigns included in the pack, comprising over 70 new missions all up. In the Alaskan campaign the premise is that the Russkies have discovered that their sale of that state to the Yanks was actually illegitimate. Turns out that the bill of sale was actually signed by Nicholai the Circus bear instead of Tsar Nicholai III and now the Russians want it back! Your opponents here are a bit tougher than the Cuban goat herders you faced in the original game, this is the pride of the Russian Air Force after all. The second campaign deals with trying to stop Chinese expansion into the Sea of Japan and the Korean peninsula, where you'll be coming up against the antiquated but numerous Chinese Navy,



Dogfight over Legoland

Army and Air Force.

On top of the new campaigns and territory the Enhanced Campaign CD also includes an update to the latest version of the Game and a few new features too. For a start you now have the F-14 at your disposal, as well as the F-22 and F/A-18, along with its' Phoenix missile system. An autopilot function has been added to get you through the boring bits and you also now have flaps! JF3 will also now allow you to reprogram joystick functions to your own taste, which will be a relief to many.

George Soropos

CATEGORY Combat Flight Sim

PLAYERS 1

PUBLISHER Mission Studios

PRICE \$59.95

RATING G

AVAILABLE Now

NEED P100, 16Mb RAM, 4X CD

WANT P200MMX, 3D gfx card, 32Mb RAM, 16X CD or (without 3D card) P11 266

overall

85%

A useful and worthwhile addition to JF3 that would have been better if it offered the 3D and Multiplayer patches too.



Risk

CATEGORY	Strategy
PLAYERS	1-8
PUBLISHER	Hasbro
PRICE	\$69.95
RATING	G
AVAILABLE	Now
NEED	486DX/66, 8Mb RAM, WIN95
WANT	P75, 16Mb RAM, Quad Speed CD-ROM

overall

84%

A great translation of Risk that will not disappoint fans of the original and those wanting to dabble in world conquest.

If board game world domination is your passion, Risk needs minimal introduction. A treat is in store for those that have lacked the pleasure of sitting around a table manically rolling dice, pushing plastic pieces around and generally being a lounge room Megalomaniac. Positioning your Napoleonic era Battalions around the globe, the idea is to launch attacks on enemy countries whilst maintaining strong defensive frontiers. Simple idea, but it's a tactician's dream.

In a clever move designed not to upset the traditional Risk fan base, but still be innovative, Risk is really two games in one. Classic Risk is the straight conversion of the board game rules, that will have veterans jumping in without too much both-



er. Ultimate Risk contains many enhancements that build upon traditional Risk playing techniques plus introducing some very daring features. Terrain, POW's, the building of fortresses and the inclusion of battlefield Generals all now play a part. The biggest change lies in the revised combat system. Whilst Classic Risk relies purely upon dice rolling to determine battle results, Ultimate Risk has you choosing actual battle tactics. Depending on the presence and leadership ability of your specific General you can choose from a multitude of choices along the lines of Frontal Assault, Left Flank Attack or the aptly named Strategic Retreat. It's a nice addition that doesn't spoil the flavour of the game.

High quality graphics, challenging AI and new maps covering North America, Asia and Battlefield Europe. Computer Risk has all these classy attributes, and thank-



France dominating the south pacific islands.

ly a multi-player mode. Those with modems and LAN access can compete with humans and computer opponents taking up to eight player slots. A patch allowing Hot Seat Play on one computer is available at www.hasbro.com, as is news that an Internet feature is about to arrive. The only disappointment is that multiplayer is restricted to Classic Risk, relegating Ultimate Risk to solo play only. Still though both the Classic and the Ultimate Risks on showcase here are highly entertaining and very easy to get hooked on.

Peter Sharpe

Tigershark

CATEGORY	Action
PLAYERS	1
PUBLISHER	GT Interactive
PRICE	STBA
RATING	G8+
AVAILABLE	Now
NEED	P66, 16Mb RAM, WIN95.
WANT	3DFX card, 4 button joystick/gamepad.

overall

74%

Enjoyable ocean going blast-a-thon, requires a 3Dfx card for long term enjoyment.

At some point most of us feel a need to gain a blister on our trigger finger by jumping into a spaceship/flying thingy and just shoot things... lots of things. In this case your vehicle of choice is the "Tigershark". Equipped with the expected array of missiles and armour piercing cannons it also has the nifty ability to cruise under water or skim along the surface. It wouldn't seem out of place in a Batman or James Bond flick. The storyline is set in the future with the Russkies interfering in Japanese efforts to mine the seabed for energy, the result being potential world catastrophe.

The Russians of the future have obviously gotten past their financial problems of present times as Helicopter Gunships and numer-

ous underwater attack craft are constantly bearing down on you. While the mission structure, including taking out various enemy installations is pretty standard fare in such games, Tigershark does have a few aces up its' sleeve. Being able to quickly submerge and surface is enjoyable as the action dynamically changes depending on your depth or lack of it. Jetboating on the surface consists of point to point combat with various topside enemy craft, nothing too exciting. When submerging everything is suddenly all 3D with lots of twisting and turning in the attempt to stay on the six of your numerous targets. A special moment was cruising below the hull of a frigate, surfacing only to get pounded by heavy guns... no problem just submerge and then bullseye with a torpedo.

You'll need a fairly beefy setup to enjoy Tigershark. A stock standard



Die, Miami Vice speedboat with guns, die!

Pentium 133 will move the frame rate along at an acceptable rate, but the graphics are best described as average. An MMX Pentium pretties everything up slightly but the framerate does suffer when there are a lot of objects moving around. The way to play this game is definitely with a 3DFX card. Fast with smooth textures all over the place, once you play this version it's impossible to choose any other graphics option. Tigershark won't replace Quake or MDK as your adrenaline pumper but it's good for some "Turn the Brain off" underwater action.

Peter Sharpe



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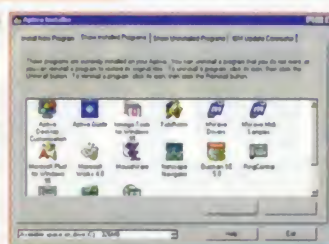
IBM Aptiva Series

This is, bar none, one of the best looking machines we've ever seen. A black computer system, with lots of funky lights and a sexy sleek design is something a lot of people have been wanting for a long time. We even know of some sick, sad, and sorry people (yes, we mean you, Mr Mills) that have gone so far as to spraypaint their cases black in an effort to make their computer cool. (Be sure to mention it next time you write him a letter for the Setup section, won't you?). IBM have done a spot of market research and discovered that we like sleek black things 'cos they look cool, and remind us of other necessary household devices like TV's and Videos, rather than of dowdy old tan coloured workstations. IBM's Aptiva computers are definitely cool looking, and possibly even sexy, depending on how long it's been since... but I'm getting of the topic here. Let's talk about the Aptiva, shall we?

There's two models to choose from, the Q81 and the Q91. Both are very decent setups, but suffer from the odd shortcoming or two, unfortunately. You can see how strange it looks from the photo, but it all makes sense. You've got the desktop sitting



Much like the Packard Bell navigator, IBM's friendlyfront end makes newbies feel comfy. Also much like Navigator, it soon gets in the way annoyingly



down somewhere under a desk, out of sight and out of mind and a console that sits underneath the monitor to hold your CD-Rom and floppy drives. It makes a lot of sense when you think about it - what do you need all your hard drives and peripheral cards so close to you for, and why shouldn't the monitor be raised up a little? With the addition of the power switch on the desktop console, the Aptiva looks great, is compact and functions extremely well as a physical

unit. There's even a set of speakers on the side of the monitor, and decent ones too, to further reduce desk clutter. Someone has put a great deal of thought into the design and look, and they get a deserved 5 stars from us - the S series is by far the best looking and functional design we've seen anywhere.

But you can only marvel at how pretty the machine looks for so long though. After a while you're going to want to turn it on, and hopefully marvel at how fast

200MHz model does come with 32MB however, which is much better. All up the Aptiva S series' look fantastic, and are a definite step up from the average desktop machine, and as you can see from the specs on the left, mostly you're getting quality and power inside as well, albeit for a price.

System Specs

	Aptiva S Q81	Aptiva S Q91
Processor	166MHz MMX	200MHz MMX
Memory	16Mb SDRAM	32Mb SDRAM
Hard Drive	3.1GD HD	3.1Gb HD
L2 Cache	256k	256K
Video Card	ATI264GT-b Rage2	ATI264GT-b Rage2
Both with 'ATI Rage 3D Pro' 3D acceleration, 2Mb SGRAM, 64 bit graphics		
Monitor	15-inch	17-inch
0.28 dot pitch (both) 69Hz horizontal scan frequency (both)		
CD-Rom	16x Max	16x Max
Sound Card	Waterford 2	Waterford 2
Both with 32 voice wavetable synthesis Both with Sound Blaster emulation		
Speakers	2 stereo on monitor	2 stereo on monitor plus subwoofer
Joystick	Wingcommander	Wingcommander
Modem	33.6kbps DSVD Int	33.6k DSVD Int
Operating system	Win 95	Win 95
RRP	\$4499	\$5499



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HOTWARE

DIAMOND Monster Sound



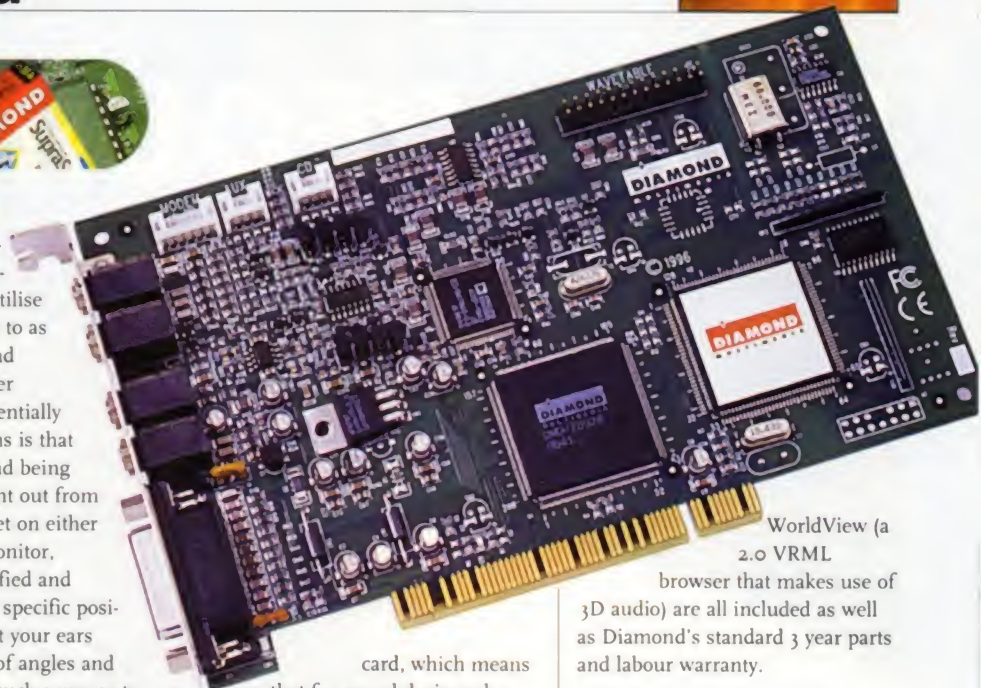
How would you fancy a truly surround sound experience with your home PC? Well, this month we've had the pleasure of taking a ride into 3D surround sound, and it's really quite amazing how good it sounds, even through a fairly average set of speakers.

The Diamond Monster Sound 3D is a PCI bus device though, so it will only work in Windows95. It is designed, however, to take advantage of Microsoft's DirectSound and DirectSound3D, as well as others like Aureal 3D, so you can expect an awesome sound experience from a large number of games - among those making use of Microsoft DirectSound and DirectSound3D are Lucas Arts, Activision, Interplay, Broderbund and Electronic Arts.

When we hear in real life, there are split-second differences in the way we hear - depending upon where the sound comes from, the left and right ears take in the sound waves at slightly different times. Then there's the physical body, which tends to get in the way of the sound signal and affects the way that our ears take in the sound waves. Aureal have developed the 'A3D interactive' audio technology used on the card, which was origi-

nally designed for NASA's virtual reality simulators. They utilise what they refer to as HRTFs, or Head Related Transfer Functions. Essentially what this means is that instead of sound being pumped straight out from two speakers set on either side of your monitor, sound is amplified and pumped out to specific positions, which hit your ears from a variety of angles and amplitudes in such a way as to create a positional 3 dimensional sound experience.

The card itself has a 32 voice hardware wavetable synthesiser, and works either as a stand alone device, or can be used as a sort of daughterboard for a SoundBlaster card, or the like. The existing sound card is still used for DOS games, and instead of the speakers plugging in to the SoundBlaster, they use the output port from the Monster Sound card. A loopback cable connects from the output port of the SoundBlaster to the input port of the Diamond



card, which means that for sound device selection you still select a SoundBlaster card and the sound gets piped through to the 3D card. Not only this, but the joystick port is digital

WorldView (a 2.0 VRML browser that makes use of 3D audio) are all included as well as Diamond's standard 3 year parts and labour warranty.

Not complete without...

At \$349 the Monster Sound makes for a very attractive proposition, and when combined with a

Monster Sound



on the Monster Sound rather than software controlled analogue as with most standard sound cards. What this means is that around 15% of the processor power

required for joystick acceleration is freed up for the game itself. It is, of course, plug'n'play compatible and even with a speaker setup that is short of mind blowing you will notice a definite improvement in the sound in your games, without doubt. And Diamond have been nice enough to include the odd game or two so that you can sample the wonder that is Direct3D sound through a 3D sound card straightaway. Free and complete versions of SimCopter, Outlaws, Rocket Jockey, Tigershark and

decent array of speakers you're looking at a fantastic sound setup. Take something like the Yamaha 4 speaker and subwoofer combination. 2 Sets of powered digital sound processing speakers, the YST-M20DSP for example, one set for front and one for the rear will have you squirming and ducking in your chair in an effort to evade the alien nasty firing at you from behind. Add a subwoofer, for those oh so essential booming shotgun blasts that shake the floor and rattle the windows and you'll be wondering how you ever made do without! Yamaha's YST-M20DSP speakers can be picked up for \$180 a pair, and the YST-MSW10 subwoofer will set you back \$200. For more info on the speakers or the Monster Sound, contact ChipsNBits on 039 696 1911.

This really is the next generation of PC sound. Hearing is believing

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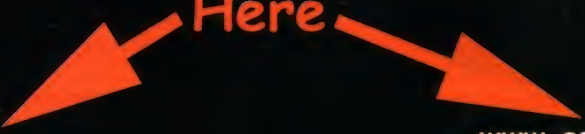
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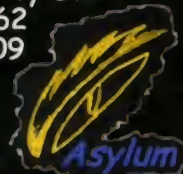
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It's a new Thrustmaster! MILLENIUM 3D

Interceptor Flight Control System

As the myth goes, when we were really little we all aspired to be astronauts for NASA. Well, so the myth goes anyway. Maybe it's an idea better suited to the 'I dream of Jeanie' generation, but still I think most of us would jump at the chance to get into the pilots seat of a Space Shuttle. Good old trusty Thrustmaster, the absolute legends of the joystick world, have created a joystick modelled on the real control yoke of the Space Shuttle, and it looks suitably high-tech and space agey. There's even some space agey type technology in the joystick, with micro-processor controlled optical sensors for programming the four axes and six buttons of the stick. It's a completely digital joystick, using non-contact optical sensors that sense the movements of the handle and feed them through the microprocessor, so you're going to get an accurate reaction. There's also the necessary four way hat switch on the handle, and a thrust control as well as a couple of buttons

for your left hand if you need them. The Millennium comes with pre-configured files for plenty of major games to save bugging around and setting it up yourself too, which is a nice thought. It is Windows 95 only though, so DOS games will have to be played under Windows. That's only a small downside to a pretty cool looking stick though. Pricing wasn't available at the time of writing, unfortunately.

Meanwhile...

In other Joystick news, Logitech have just released a couple of new controllers as well - the Wingman Extreme Digital and ThunderPad digital. Digital controls mean that the movements and commands are sent to the computer instan-

The Millennium can also move its handle independently to the base - a completely new joystick move!

taneously, without using up CPU power, reducing the load on the game, and leaving more space for the graphics and such. Both of the Logitech joysticks will work in DOS though, as they both work in

either digital or analogue mode. The Thunderpad digital can be picked up for \$59, and the Wingman Extreme will set you back \$99. More info from Dataflow on (02) 9417 9700.

VIEWSONIC P815 21" monitor

It's big, it's bold and it's beautiful. It's a 21 inch monitor, which should send shivers down the spine of any self respecting technophile. When you consider that it has almost twice the viewing area of a 15 inch monitor, you should get some idea of the impact sticking one of these mothers on your desk will have to your life. Games will look immeasurably better, and going back to a smaller monitor will seem akin to scratching a \$25,000 lottery ticket and then accidentally dropping it into a storm drain shortly afterwards.

There are a couple of warning factors here though - firstly (seriously) you'll need a big desk to fit the Viewsonic upon. It's around 52cm long, 50cm wide, and 48cm high, which is pretty bloody huge compared to most average monitors. It's well worth it though, the Viewsonic has a 0.25mm dot pitch, which is extremely impressive considering the size of the monitor. The 'dot pitch' is, very basically, how clear the image on your screen is going to be. Many other larger monitors, especially in the past, have had a larger dot pitch than average sized ones because of the increase in the size of the screen. The other warning factor is your video card - you're going to need a beastie to make use of the capabilities of a 21 inch monitor, and 4MB of video RAM is heartily recommended. Let's face it though, if you can afford a monitor like this, then a high end video card and large desk aren't going to be huge headaches for you.

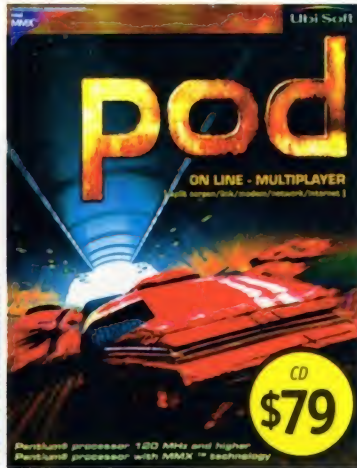
The P815 will support resolutions of up to 1800 x 1440 maximum, and automatically track the display frequency, from 30KHz -115KHz horizontally and 50Hz -160Hz vertically. Simply, if you can afford it, then get one. No matter what anyone else tells you, bigger is always better, and 21 inches is pretty bloody big. Get it for around \$4099 from ChipsNBits on 039 696 1911.



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Welcome to this month's 3D Technews. Because we at PowerPlay give a damn, from this month on we will be including the latest 3D enhanced shareware games that we check out in this column, on the cover CD. Due to time constraints, deadlines and all that fun publisher stuff, we'll do our best to include these items on the cover CD menu, most likely the specials area, however you may have to install them from the CD yourself. Look for all the latest in the "Technews" directory from the root of the CD.

SOFTWARE

One of the most impressive releases this month has been in the form of a game called Terracide by Eidos Interactive, the people that brought Lara to life in Tomb Raiders. Terracide is like Descent, you're essentially in some building, factory, whatever, and you have to run around destroying the bad robots.

Who cares about the plot though, Terracide has some of the most incredibly in-depth graphics to come out for 3D accelerators yet. Utilising distance fogging, translucency, transparent textures, real time light sourcing, multi coloured lighting, this game has it all including support for every major accelerator there is, from the Virge VX to the Power VR. Just check out the screen shots and the demo on this month's cover CD.

Moto Racer

Looking at the screenshots to Moto Racer, it might just seem like



another Motor bike sim, which, if you were pedantic it would be. Except for the fact that this is so FAST on the 3Dfx and other accelerators you really feel as if you are really there.

This is a game to look out for, the speed, the physics, it's got it all. This is what 3D accelerators were made for. Check out the demo on the cover CD (\technews\mrdemo).

NEW HARDWARE

MVP - It's a new Peripheral category!

Thanks to those busy techos at C-Cube, mainstream PC users will now be able to record Digital Video with a new device known as the MVP (MPEG Video Peripheral).

MVPs are low-cost, easy-to-install external devices that connect to a desktop or notebook PC and allow users to easily capture and record high-quality video or still images into their computers. MVPs connect to a PC via an external port, such as the printer port, alleviating the need for consumers to open up their PCs to install complex add-in cards and of course being of great benefit to Notebook users.

By using an MVP to connect their PC to a camcorder, VCR or TV tuner, users can capture and record full-motion video or still images in real-time for multimedia presentations, video editing, Internet and intranet applications, and video e-mail. Powering the MVP is C-Cube's VideoRISC processor, a very powerful engine that can record and compress high-quality video in real-time. Although no fixed price is available yet, we're told they will be very affordable.

An MVP will be able to capture a still image at 704X576 from any video source with higher resolutions being achieved using software interpolation. The video recording side will capture at a full 30 frames per second utilising



MPEG-1 video and MPEG audio.

Highly interested in this new product are Adaptec. Says David Ulmer, Marketing Manager: "MVPs are an ideal complement for CD-Recordable products, especially when using Adaptec software such as Easy-CD Pro. We checked out Easy-CD Pro and agree. It's an extremely user friendly CD writing package that would allow consumers to create a permanent digital library of their favorite video memories".

3Demon

The Omnicomp Graphics Corporation have a surprise for all. They're announcing the



Above and below: Terracide. Looks a lot like Descent doesn't it?



The awesome Moto Racer - even without 3D hardware this game is a must-play

Microsystem's MicroStation, Parametric Technology's ProEngineer, Newtek's

Lightwave (The software used to create Babylon 5 special effects), Gemini, SDRC and Lightscape.

The performance that the 3DEMON MX offers pushes the capabilities of the PC deep into the heartland of Silicon Graphic's desktop machines. Suddenly these high end players are being threatened by the increasing attractiveness of the PentiumPro, Pentium II and Alpha platforms to 3D graphics professionals.

Trident

The oldies out there will remember Trident video cards. You know the ones, they were always in the cheapest and shall we say, not renown for their speed. That isn't to say that there latest offering the Trident 3DImage975 will be the same. Obviously good enough for HighTech, they've selected it as the prime chipset for their latest accelerator board.

The most interesting thing about the Trident 3D accelerator chip is that it's the first PC97 compliant graphics accelerator chip to provide an on-chip triangle setup engine with up to 4MB of SGRAM sup-

port. This setup engine relieves the CPU of up to 50% of its processing load during peak 3D operations.

The Trident chip does look to be quite impressive indeed. It will offer high-performance 2D graphics, high-quality video playback, a built in TV tuner with S-Video out allowing you to play on your TV! Unconfirmed (by us) testing even states that the 3DImage975 chip is visibly faster than competitors within the price range, which roughly translated implies that it won't be faster than a 3Dfx.

Peter Jen the vice president of Asia Sales however summed it up perfectly when he said, "There is little point in having an advanced solution that no one can either afford, or implement into their design". And at US\$50 for 2Mb SGRAM or US\$65 with 4Mb SGRAM wholesale, the price is definitely right.

ATI

ATI are still at it. Their latest card is the "All-In-One TV, Video, Graphics and Multimedia Accelerator Board" fondly known as the "All in Wonder". It has some support too, Sony, the one and only, will be using it for their new 200 MHz PCV-130 and 233 MHz PCV-150 MMX PCs.

The All-In-Wonder provides six graphics and multimedia functions: 1) fast 2D acceleration, 2) rich 3D acceleration featuring the brand

new 3D Rage II+ 3) industry-leading video acceleration, including high quality MPEG playback, 4) video capture, 5) intelligent and interactive TV tuning, and 6) TV-out for display on a TV set. Sounding rather similar to the Trident chipset, this seems to be the big trend for Chip manufacturers.

The Rage II+ within the All in Wonder will feature perspective correction, texture (bi-linear) filtering, mip-mapping, Gouraud shading, Z-buffering and alpha blending. The All-In-Wonder also supports full-screen, full-motion TV-quality video such as MPEG and Video CD 2.0 movie disks.

The also included Intelligent TV tuner claimed as an interactive experience will allow owners to use TV, not just watch it. Video capture allows users to capture still photographs and video from TV, video recorders, camcorders or video disks. The ability to record closed-captioning content also provides a cost-free way to obtain programming transcripts allowing the All-In-Wonder to alert the user when desired programs are on and, when key words, called Hot Words are keyed in, the All-In-Wonder can even notify a user that a topic of interest is being broadcast.

Even cooler features for the tele junkie include Scheduled Viewing, which turns on desired programs automatically, and Channel Surfing,



which provides thumbnail previews in multiple windows on the screen, zoom and even the ability to use TV programs as video wall paper.

On the TV front, ATI are claiming their Advanced Flicker Control System (or AFCS, as we warmly refer to it as in the PowerPlay office) will allow for big screen gaming. ATI's ImpacTV(TM) chip allows usage of a large screen TVs as a monitor providing advanced flicker control for the highest quality TV display that is easy to watch.

Unique to the Sony PCV-130 and PCV-150, the first systems to incorporate ATI's All-In-Wonder technology they'll sport a unique front-panel with AV input connectors for camcorders and other audio/video devices.

STB

Our friends at STB have been hard at it again. They've just finished 2 new products known as the Twister 280 and Twister 240 professional-quality 3D accelerators. The Twister 280 and Twister 240, are built around the 3Dlabs PERMEDIA 2 integrated high-bandwidth 2-D/3-D/video accelerator.

Put your bibs on for this one. The

Twister 240 is a 64-bit accelerator that boasts a potent 230MHz (that's TWO HUNDRED and THIRTY MHz) integrated RAMDAC that delivers exceptionally high resolutions as high as 1600x1200 at 16.7 million colors and refresh rates up to 200Hz. The Twister 280 provides Microsoft DirectDraw and PC'97-compliant graphics and video acceleration with full-screen, full-motion playback of multimedia video clips.

The Twister 280, available with 8MB of high-bandwidth 100MHz SGRAM video memory will also support MPEG-2, a TV tuner and video-conferencing digital video streams. With S-Video out being the big thing lately, STB have integrated their Multimedia Hub Architecture providing S-Video output for high-end video display and editing, NTSC/PAL output for TV-monitor display and an impressive suite of multimedia controls.

Mitsubishi

Just when you thought the world had enough 3D-accelerator manufacturers out there, Mitsubishi have released their 3Dpro/2mp accelerator that has set new records for the fastest 3D graphics accelerator for Windows NT Systems.

The 3Dpro/2mp achieved such fame when it achieved the fastest OpenGL performance of all current single-board 3D graphics accelerators in production for Windows NT(r) workstations.

The test results were obtained by using a 3DPro/2mp reference board containing Mitsubishi's 3DPro/2mp chipset, running on a 200-MHz Pentium(r) Pro workstation with

128 Mbytes of DRAM and using the Windows NT 4.0 operating system. You know, your every day home PC! Competing products tested include those from 3Dlabs, which they beat.

The tests undertaken were of a flight-simulation, measuring the relative real world graphics performance. The 3DPro/2mp chipset's GVF score is 0.58 rezstones; the nearest competitor's score is in the range of 0.17 rezstones.

Other tests included a racing car sim. The 3DPro/2mp chipset's GVR score is 0.71 rezstones; the nearest competitor's score is 0.27 rezstones. A drive-through of a lunar landscape, using a the 3DPro/2mp achieved at a maximum resolution for true color — 1280 x 1024 20.5 fps; the nearest competitor is 7.5 fps.

Matrox

Finally, Matrox have announced the Matrox Millennium II which will deliver acceleration in ultra high resolutions such as 1920 x 1200. New features include enhanced 3D performance with fast Gouraud shading, hardware accelerated texture mapping as well as support for a 32-bit Z-buffer and an enhanced video scaler with x and y interpolation for faster, higher-quality video playback performance.

Among Matrox's big announcements however, was some nasty fighting backstage. It seems Matrox has decided to launch an all out war on ATI. All this is fine until it backfires on you. Matrox were blasting ATI for inaccurate perspective correction with no bi-linear filtering. Quite ironic, considering the new Mystique 220 doesn't do bi-linear filtering either. Somehow we don't think Matrox thought all of this through completely beforehand.

A CHALLENGER COMES!

Since the initial discovery of the Power VRs' limitations there was a lot of confusion as to the best card to buy. The original Power VR with its raw speed but lack of bi-linear filtering put a lot of people off. Now that the Power VR 2 is here, the controversy can be put to rest. The Power VR 2 has all the functions of the original Power VR plus one more, the much needed Bi-linear filtering. We put this card through its paces and give you the honest truth about its role in the big wide 3D accelerated world out there.

NEC POWER VR 2 APOCALYPSE 3DX

BENCHMARKS:

Tested on a Pentium 133 with 49Mb of RAM

Wizmark - Not possible

DIRECT 3D:

Test 1.

Raw textured polygons, Z buffering, Perspective correct textures, Overdraw Front to Back and gouraud Shading.

Fill rate: 21.52

Polygon throughput: 223.57

Intersection throughput: 2.53

Test 2

All of Test 1, plus Bi-linear filtering

Fill rate: 21.57

Polygon throughput: 221.71

Intersection throughput: 2.53

Test 3

All of test 1 and 2 plus specular highlights.

Power VR 2 drivers not capable of specular highlights.

Tunnel: 58.82

Fly: 34.36

Oct1: 60.60

Oct2: 58.47

Sphere: 58.82

Triangle: 60.60

Twist: 58.82

Software Included:

Resident Evil
Terracide
Wipeout 2097
Pod
Mach Warrior II
Ultimate Race

Installation

Installing the Power VR 2 is very simple. In fact, part of the installation process that is quite amazing is noticing just how small and compact the Power VR 2 is. With a minimal number of chips squeezed into a card only the length of the PCI slot, it's well made indeed. Once inserted, it's a only a matter of starting Windows up, waiting for the Plug and Play manager to request the driver CD and it's all installed. Very straight forward, very easy.

Using it

Where the installation of the card and the drivers is easy, there are a number of realities concerning the usage of the drivers themselves that could cause people some concern. Firstly, the Power VR 2 does not seem to be fully Direct 3D

COVER CD TECHNEWS SUPPLEMENT

- Moto Racer demo.
- Warthog rolling demo.
- Formula 1 Beta 3 patch for the retail version that supports 3Dfx Voodoo Graphics. Requires Glide 2.3 or higher Runtime drivers.
- OpenGL 3Dfx Driver.
- Outlaws patch for the retail version that supports 3Dfx Voodoo Graphics.
- SimCopter v1.02 patch for retail version that supports 3Dfx Voodoo Graphics.
- Star Fighter patch for retail version that supports 3Dfx Voodoo Graphics.

compatible. In the lab, we spent many hours noting how the drivers interfaced with the card.

Basically, on the right of your Windows 95 toolbar where the clock and other startup programs sit, a small triangle, representative of the Power VR logo will appear. This is actually some kind of memory resident program that allows direct 3D applications access to the card. It may seem trivial but if that little program isn't running for whatever reason, your direct 3D games are not going to be accelerated.

Still on drivers, whether it's the said drivers or the card itself, it really needs a lot of memory. Although there are no direct specifications listed regarding the amount of memory you'll need in your PC, we discovered that you really need at least 32Mb. Of course, we found this out the hard way. Upon beginning the benchmarking and general testing for the Power VR 2, we found that it jittered and jumped, making for reduced benchmarking scores and annoying gameplay.

Obviously this frustrated everybody in the lab immensely and after many hours of experimentation and reinstalls, we finally proved it was a memory problem. By shutting down a number of taskbar helper apps the Power VR 2 worked like a dream. We pity the poor fool who has the same problem and not a copy of PC PowerPlay by their side!

Power VR 2 vs. 3Dfx

The benchmarks

Even back in November the stage was set for the Power VR and the 3Dfx to duke it out. They're of course back at it again and we're going to throw a few more logs onto that fire. Firstly, Videologic claim that the Power VR 2 is faster than the 3Dfx. None of our tests could substantiate this at all. Every individual Direct 3D test we ran on the Power VR 2 found that the scores were very close to those of the 3Dfx, but always just below.

The Direct 3D tests measuring throughput were possibly the

biggest performance indicator. As per the benchmarks listed at the top where the 3Dfx averages 28.02, 297.06, 4.04 on the first test, the Power VR 2 came out with 21.52, 223.57, 2.53, significantly slower.

Benchmarks are useful and do have their place, however one of the best indicators for a 3D accelerator card is their games. This month we were even indeed lucky enough to have a copy of Terracide for the 3Dfx and the Power VR. What we discovered was that even with the inclusion of bi-linear filtering, the Power VR and the 3Dfx are two totally different cards.

The first thing you notice with the 3Dfx is how much the card relies on specular, or overall lighting. The 3Dfx, because it cannot generate dynamic light sources, needs all of the room to be lit up a certain way. The introduction of a moving light source such as a flare on the 3Dfx intensifies all the pixels in an area. To the VR 2's, advantage, because it can raytrace instead of just lighting the area up, it only lights the faces that can see the light making for a more realistic environment especially when in combat.

While the Power VR 2 may have the edge in graphics this time, it does have to be said that the 3Dfx version of Terracide, off the same, CD is faster. Where the Power VR version would skip a beat fairly regularly, the 3Dfx version was silky smooth.

The games

There's one game that will always be the feather in the Power VR's cap: Ultimate Race. This is the must have, must play, must see game. Ultimate Race is essentially just a car racing game, but the quality of the 3D objects and the course is as good as any arcade game the likes of Daytona. It's fast, brightly coloured, features brilliant car physics and is just so playable it whisks whole chunks of your life away without you even realising.

Yet, within Ultimate Race lies the seeming contradiction of the Power VR 2. Watching Ultimate Race, there is no doubt in anyone's mind that the VR 2 is faster than the 3Dfx. Ultimate Race however, is a native VR 2 game. The Direct 3D games, which Terracide is also one of, just does not do the VR 2 justice.

Terracide which was discussed earlier also ships with the card and is essentially a very modern and advanced version of Descent (II).



MAXI GAMER 3Dfx

Included software: Pod

BENCHMARKS:

Wizmark: 14556.7

DIRECT 3D

Test 1.

Raw textured polygons, Z buffering, Perspective correct textures, Overdraw Front to Back and gouraud Shading.

Fill rate: 27.72

Polygon throughput: 297.97

Intersection throughput: 3.86

Test 2

All of Test 1, plus Bi-linear filtering

Fill rate: 28.00

Polygon throughput: 291.71

Intersection throughput: 3.95

Test 3

All of test 1 and 2 plus specular highlights.

Fill rate: 27.72

Polygon throughput: 259.71

Intersection throughput: 2.75

Tunnel: 60.60

Fly: 48.37

Oct1: 60.60

Oct2: 60.60

Sphere: 60.97

Triangle: 60.60

Twist: 60.60

RV FLASH 3D

Included software: None

BENCHMARKS:

Wizmark: 14447.4

DIRECT 3D

Test 1.

Raw textured polygons, Z buffering, Perspective correct textures, Overdraw Front to Back and gouraud Shading.

Fill rate: 28.02

Polygon throughput: 297.06

Intersection throughput: 4.04

Test 2

All of Test 1, plus Bi-linear filtering

Fill rate: 28.00

Polygon throughput: 297.60

Intersection throughput: 4.03

Test 3

All of test 1 and 2 plus specular highlights.

Fill rate: 28.02

Polygon throughput: 260.40

Intersection throughput: 2.88

Tunnel: 60.60

Fly: 49.26

Oct1: 60.60

Oct2: 60.60

Sphere: 60.97

Triangle: 60.60

Twist: 60.60

NEW 3Dfx CARDS

RV Flash 3D 3Dfx Maxi Gamer 3Dfx

3Dfx cards are popular, really popular. So popular that companies everywhere are springing up to produce them which is great because it means more competition and cheaper prices for you the consumer.

We were given an RV Flash 3D 3Dfx card and a Maxi Gamer 3Dfx card to review. By far the most amusing factor of these two cards is that they're absolutely identical. Right down to the number of resistors, processors, memory chips, everything. The scientists out there told us they only knew how to clone sheep, well obviously they know how to clone 3Dfx cards as well.

What will make the difference of course is the price, but we decided to sit down and benchmark them for you anyway. Here's each cards price and 3D performance.

You mosey around a series of mines searching for enemy robots to destroy. It's a thoroughly well done game and very entertaining. Also included are another 2 racing games: Pod and Wipeout 2097, which both look and play fantastic on the VR 2.

Conclusion

The verdict is that the Power VR 2 is an excellent card. The introduction of bi-linear filtering will allow it to compete on par with other advanced accelerators. The downside however is that the drivers aren't really very effectual and could present a lot of difficulties for the more novice of users. Add to that the fact that the 3Dfx has more software titles and in every test we tried ran smoother, then you're looking at a VR 2 defeat.

That isn't to say all is lost though, the Power VR 2, being a processing card and not a video card, will work great in conjunction with a 3Dfx. With games such as Ultimate Race out there, it's a worthy addition to your PC.

LEGEND DELTA 3D

Chipset: Permedia GX featuring Gouraud and flat shading, Gint Delta Geometry processor, specular highlighting, alpha blend translucency and chromakeying, full scene anti-aliasing, bilinear filtering and 8/16 bit dithering.

Memory: 4Mb SGRAM

Software Included

Elk Moon Murder

Fatal Racing

RRP \$349

BENCHMARKS - WINDOWS

Wizmark: 14446

*Note, no mip mapping.

DIRECT 3D

Test 1

Raw textured polygons, Z buffering, Perspective correct texturing, Overdraw Front to Back and gouraud shading.

Fill Rate	: 12.74
Polygon Throughput	: 321.41
Intersection throughput	: 2.82

Test 2

Fill Rate	: 7.76
Polygon Throughput	: 330.17
Intersection throughput	: 2.60

Test 3

Fill Rate	: 7.76
Polygon Throughput	: 287.24
Intersection throughput	: 2.59

ADDITIONAL DIRECT 3D TESTS

Tunnel	
640 x 480 16 bit	: 60.97 fps
800 x 600 16 bit	: 30.39 fps
Window	: 140.84 fps

Fly	: 53.47 fps
Window	: 82.64 fps

Oct1	: 60.60 fps
Window	: 453.64 fps

Oct2	: 60.97 fps
Window	: 625.84 fps

Sphere	: 60.60 fps
Window	: 200.08 fps

Triangle	: 62.50 fps
Window	: 204.0 fps

Twist	: 60.97 fps
Window	: 227.27 fps

WINBENCH VIDEO TESTS

1024 X 768 X 16 bit	: 24.0 million pixels per second
1280 X 1024 X 16 bit	: 22.8 million pixels per second

DOS

3D Bench	: 96.2 fps
SVGA Bench	: 22.4 fps

QUAKE

320 x 200	: 28.91 fps
320 x 400	: 17.11 fps
320 x 480	: 16.34 fps
360 x 400	: 14.95 fps
360 x 480	: 12.9 fps

Ease of Installation: Very Poor



Legen Delta 3D

Except for the first time, there's really nothing that hard with the installation of a PCI device into the motherboard. The "debugging" of IRQs' or other conflicts post installation however can not only be a dramatic process, but exceedingly traumatic as well.

Which was definitely the case with the Legend Delta 3D. Into the motherboard it went without a hitch, starting the PC however was another story. The SCSI card that we had in our test system no longer appeared to function. Actually, the entire machine just stared blankly at us.

The removal of jumpers off cards was probably a godsend for the electronically fearful or inept. For the rest of us though it leaves one fascinating dilemma. Take this scenario for example.

You have a Legend Delta video card in your machine that's essential for display. You go and buy a new SCSI card, which as in our situation conflicts with the video card. Assuming the two are incompatible and the only way to change the SCSI cards interrupt is by booting the PC and using some specialised software. How would you ever be able to boot your PC to fix it?

Obviously you would have to insert another Video card, change the SCSI interrupt, put the Delta 3D back in, if it works - great. If not, lather repeat and rinse until successful. What a pain in the arse!

There is a reason for this large failure on the cards behalf. Essentially the 3D geometry processor that this card relies heavily on for its powerful 3D uses an interrupt.

Performance

This card is fast, very very fast. 2D performance although not faster than the Diamond Stealth 3000 or Matrox Mystique is still a pleasure to use. With enough

video memory to satisfy, the card runs comfortably at 1280 x 1024 with 65000 colours.

3D performance however is simply earth shattering. The full screen Direct 3D tests do all seem to peter out at the 60 fps range. This is obviously due to limitations within Direct 3D within the full screen direct write operations to the video card. Rumour has it that Direct X 5 or its predecessor will improve this dramatically. Irrespective of this, the windowed scores display this cards' performance. Just look at the oct2 score; 625.84 fps. That's almost unthinkable.

It is of course the 3D geometry processor on the card that is doing this. Being essentially designed for heavy duty CAD operations you can imagine the 3D studio MAX users delight when 3D of that speed makes his life so much easier. Built in MPEG support was also amazing, offering brighter colours and a perfect frame rate at 1280 X 1024 65k colours.

Dos support was also blisteringly fast. Quake ran extremely fast, the benchmarks all sky-rocketed and a "dir /s" was more like a psychedelic experience than a directory listing.

The games that shipped with this card were all very pitiful. Elk Moon Murder and Fatal Racing, both obviously non-accelerated. To alleviate this we brought Terracide up. Everything was fast, though graphically it looked like almost identical to the S3 Virge version. As per the screen shots, the drivers were having quite a hard time with transparent textures.

Essentially this card is great for anyone that does heavy or even casual 3D work. You'll get a blast out of the raw geometric power. If said person also likes to play games here and there and is happy to play them within the Win95, platform then they can expect fast gameplay on par with the 3Dfx, but not graphics of the same quality.



Just one of
Apocalypse 3D's
many Awards.

KICK ASS!

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Apocalypse 3D or 3Dfx to
Apocalypse 3Dx, call us!



**The Next Generation in
Graphics Accelerators**

Tomb Raider
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5TH ELEMENT
'PowerVR Ready'
'COMING SOON'



Apocalypse 3Dx

Explosive Acceleration for 3D Games

For **KICK ASS** explosive arcade-style gaming action and unparalleled performance, you need a **KICK ASS** video graphics card. So we created one — the Apocalypse 3Dx.

Based on the revolutionary PowerVR technology from NEC® and VideoLogic®, Apocalypse 3Dx is the next generation in 3D technology.

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 - MechWarrior2®
 - Wipeout™ 2097
 - Resident Evil™
- PCI 2.1 Plug and Play card
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Where it all starts...

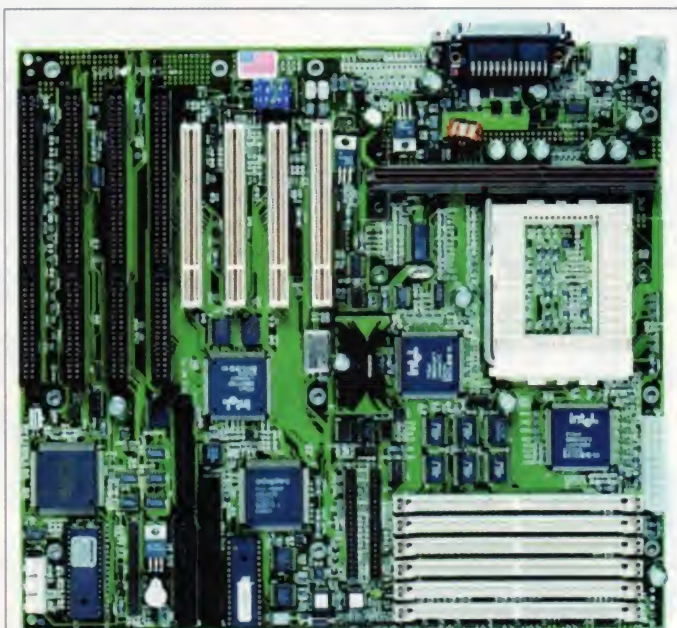
THE MOTHERBOARD

One of the most overlooked components in a PC system is the mainboard or motherboard, as they are commonly known. Most gamers would know the chipset that their motherboard uses, but would have no idea of who actually designed and made it. This is probably due to the fact that most clone no-name brand PCs will have a motherboard that was designed and manufactured by one of the many generic motherboard makers in the Asia-Pacific region. These motherboards will work perfectly well, but usually have not been optimised for the best possible performance. This is more than likely due to the fact that they have to produce the motherboards at a good price and will often have to cut corners at the expense of speed.

Motherboards made by some of the bigger names in motherboard design such as ASUS, AOPEN, ABIT and TYAN offer far greater performance than the generic brand type motherboards and can often be as much as 10% performance boost throughout the entire system over some generic motherboards!

The motherboard is one of the most integral components in a PC system, as the it is basically the medium through which all devices will communicate with one another.

There are three main types of motherboard: Pentium or Socket 7 style motherboards, Pentium Pro or Socket 8 motherboards and the Pentium II or SEC cartridge style motherboards.



It's often worth investing a little more in a good quality motherboard

SOCKET 7

This socket comes in the form of a PGA (Pin Grid Array) ZIF (Zero Insertion Force) socket (see fig. 1). Socket 7 sockets can not only take Intel's Pentium and Pentium MMX CPU's but will also hold AMD's K5 and K6 CPU's, Cyrix's 6x86 and 6x86MX (formerly known as the M2) and The soon to be release C6 CPU from IDT. The support for these chips is up to

the motherboard manufacturers, which is mainly based on the voltage supply the motherboard will support.

SOCKET 8

This socket is also a PGA ZIF socket, but can only take only one type of CPU - to date this being the Pentium Pro. The Pentium Pro was

designed to have its L2 cache on-chip which is what those set of extra pins on the socket are used for.

It is very unlikely that anyone else will release a processor that will utilise this style socket, more so now that Intel released the Pentium II.

S.E.C. (SINGLE EDGE CONTACT)

Intel have done away with the old style CPU sockets and gone for a different approach. Intel's new scheme involves a slot not unlike a

PCI slot, but built to take the SEC cartridge. Intel have obviously decided that the integration of the Pentium Pro's L2 cache was a tad too expensive to be practical. So what they have done is gone for even ground and decided to bundle up the CPU and the L2 cache together on a single cartridge. In doing this Intel were able to raise the speed of the L2 cache from bus speed performance, usually 66MHz all the way up to half the speed of the CPU clock. That can be as much as 150MHz where a Pentium II 300MHz is concerned. Now that's fast. It's not all gloom and doom for those that purchased a Pentium Pro PC as your Pentium Pro CPU can slot into one of the Pentium Pro SEC cartridge adaptors that are available. This will effectively allow you to upgrade to the latest SEC slot motherboard without needing to purchase a Pentium II CPU card.

FROM BABY AT TO ATX

Most motherboards around today are based on the aging baby-AT design that is basically a standard for motherboard manufacturers so that their motherboards are guaranteed to fit in different cases from the desktop all the way up to the full tower cases. The baby-AT standard has



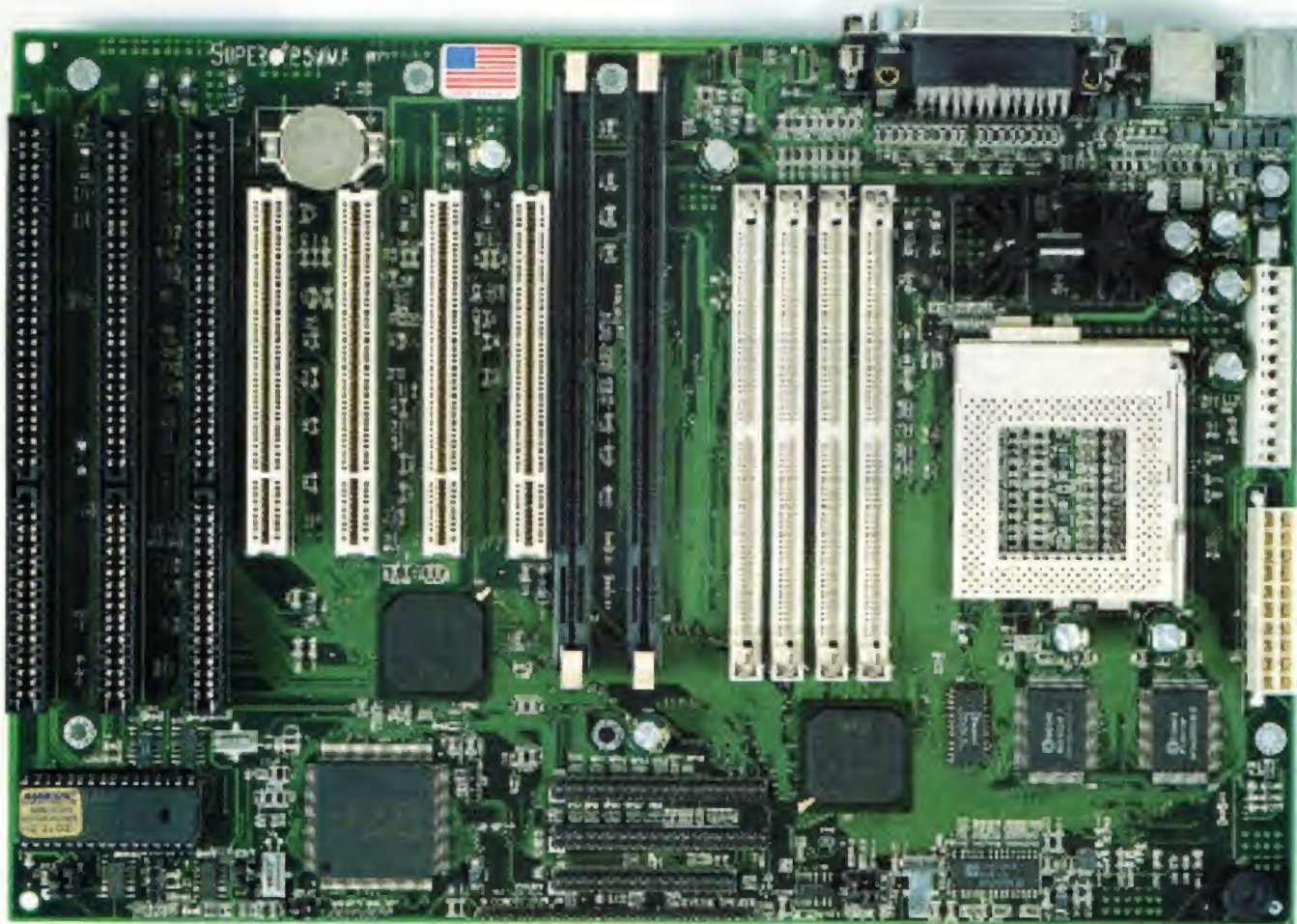
The Intel Pentium II chips



PGA ZIF socket 8



Fig. 1 PGA ZIF socket 7



Note how many parts there are. Here's a tip - don't lose the manual

one annoying design flaw in that it is very difficult to perform any sort of upgrades, as all the important upgrade components are usually very inaccessible. Baby-AT motherboards also have the problem of the CPU being in the way of expansion slots, obviously developers didn't foresee the need for massive heat sinks on CPU's therefore didn't allow for much clearance, thus reducing one expansion slot to half sized cards only. Something had to be done, enter ATX form factor, which organizes the motherboard components into a more logical fashion (ie. CPU near to power supply fan for extra cooling) allowing for easier upgrading and expansion.

DUAL VOLTS

Motherboards have special voltage regulators for the supply of correct voltage to the CPU.

Different CPU's require different voltages, some of the newer CPU require two different voltages one for the processor core and the other for the I/O portion of the CPU.

Original Pentium CPUs and some Cyrix/IBM 6x86s will either

require a voltage of 3.3V (if they are marked with STD) and 3.53V (if they are marked with VRE). Pentium MMX CPUs use a dual voltage scheme - 2.8 V and 3.3 V, AMD K6 PR2-166 to PR2-200 CPUs require a dual voltage of 2.9

V and 3.3 V. While the K6 PR2-233 requires a dual voltage of 3.2 V and 3.3 V. If you are in the market for one of these new types of processors make sure that your motherboard supports these dual voltage schemes.

INTEL, SiS, VIA AND THE OTHERS

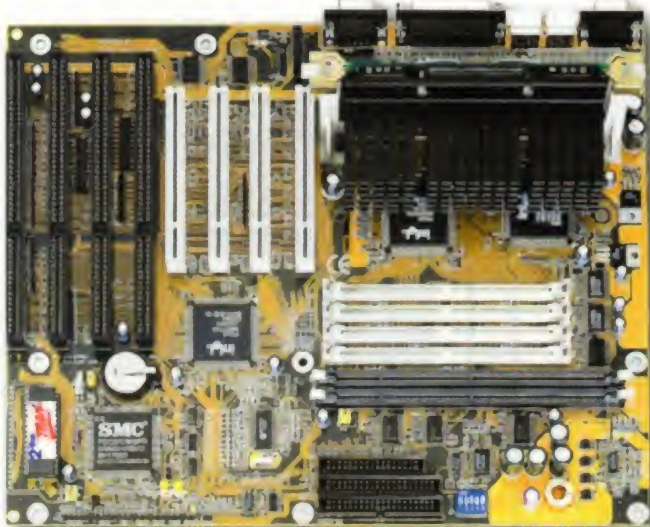
There a couple of big names in the chipset manufacturing game, Intel are very big players here, with their range of Triton chipsets. The table below shows the differences

Chipset

Features	430HX	430VX	430TX	440FX
CPU support	Pentium K5,K6 6x86, 6x86MX	Pentium K5,K6 6x86, 6x86MX	Pentium K5,K6 6x86, 6x86MX	Pentium Pro Pentium II
Max. memory installable	512MB	128MB	256MB	1024MB
Cacheable memory area	512MB	64MB	64MB	1024MB
Pipeline Burst cache support	Yes	Yes	Yes	Yes
Ultra DMA/33 support	No	No	Yes	No
USB capable	Yes	Yes	Yes	Yes
EDO DRAM support	Yes	Yes	Yes	Yes
SDRAM Support	No	Yes	Yes	No
75/83.3 MHz Bus speed	No*	No*	No*	No
Concurrent PCI support	Yes	Yes	Yes	Yes
DPMA support	No	No	Yes	No

(Dynamic Power Management Architecture)

* not officially supported but some motherboards will run at these speeds if pushed.



With innovations like AGP & UltraDMA/33 the futures looking good

between the various Intel chipsets.

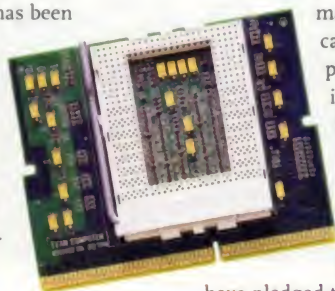
The other chipset manufacturers around are trying to play catch up with Intel at the moment.

Although the VIA and the SiS chipsets are not far off, Intels offerings and are certainly closing the gap where performance and features are concerned.

With the release of the 430TX chipset Intel has again widened the margin with the inclusion of faster SDRAM support and Ultra DMA/33. Ultra DMA/33 is a new IDE specification that increases the overall throughput of IDE drives to 33Mbits/sec - double the mode 4

hard drives around at the moment, although a DMA/33 compatible hard drive is required.

Recently Intel has been promoting a new specification known as the AGP (Accelerated Graphics Port). This will appear in their next generation chipset, known as the 440LX, but will only be available on Pentium II systems. There is still hope for the Pentium class PC



owners with AMD announcing their next chipset will bring AGP support to Socket 7 motherboards.

AGP - A GAMERS DREAM COME TRUE

The PCI bus is starting to struggle with the heavy workload that a 3D graphics card places on the bus, so Intel in their great wisdom devised a new method of connecting your graphics cards called AGP. This system offers a way for 3D graphics accelerators to use standard memory to store their Z-buffers and texture maps as the AGP graphics accelerator can access main memory at very high speeds. This is due mainly to the use of a 2x mode, which runs at 133MHz as, opposed to PCI's bus speed of 33MHz or even the latest PCI specification 2.1 with its bus speed of 66MHz. The AGP

has direct access to main memory and can employ deep pipelining to increase speed even further. Expect transfer rates of around

533Mbits/sec. All the major players in the 3D arena have pledged their support for the AGP bus, so expect some amazing 3D games when the first AGP equipped PCs hit the shelves.

When Intel finally release their long awaited 440LX chipset the Pentium II will definitely be a force to be reckoned with, although AMD could also have a winner on its hands with their soon to be released K6

enhanced motherboard chipset. AMD's solution takes into consideration the massive amount of socket 7 style motherboards still doing the rounds. Intel seems to have pinned their hopes on converting everyone to their SEC cartridge design, and they seem to have forgotten the low-end market. Intel will certainly have their fair share of followers, and who will blame them. A Pentium II running on the 440LX with SDRAM and an AGP port will no doubt be the new

System bus speed	Clock multiplier	processor speed
60	2.0	120
	2.5	150
	3.0	180
	3.5	212
	4.0	240
66	2.0	133
	2.5	166
	3.0	200
	3.5	233
	4.0	266
75	2.0	150
	2.5	187.5
	3.0	225
	3.5	262.5
	4.0	300
83.3	2.0	166.6
	2.5	208.3
	3.0	250
	3.5	291.6
	4.0	333.3

ultimate in game performance.

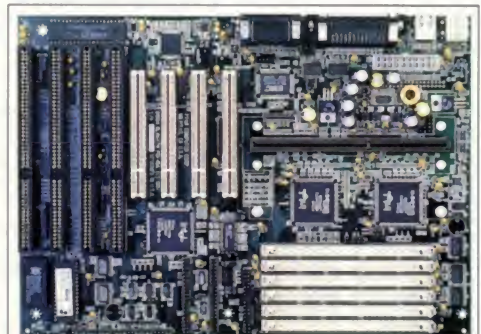
Thanks to AMD, the low-end of the market will not be over-looked, we won't have to purchase a Pentium II to be able to use technology such as the Accelerated Graphics Port and higher bus speeds. We may have to wait a few months after Intel's release for socket 7 chip implementations of AGP, as Intel has full control over the AGP spec, so definitely expect them to have one out first.

Garry Wallis

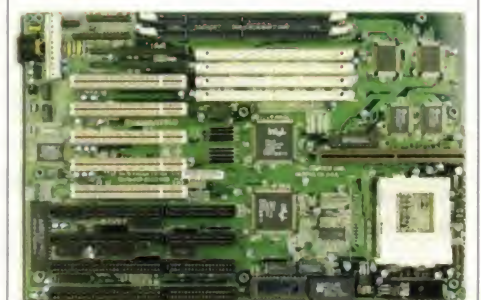
THE BLACK ART OF OVER-CLOCKING

There has been quite a bit of interest in over-clocking recently. Over-clocking is when you give the CPU a higher running frequency than it is rated for (ie. running a Pentium 120MHz at 133MHz). Let me warn you now, it can be fatal for your CPU if pushed too hard. If you want to know more about over-clocking go to <http://www.sysdoc.pair.com> but be very careful, as the CPU needs to be cooled very well - we at PC PowerPlay do NOT endorse this practice. So don't come crying to us if your CPU blows up in the process.

Although over-clocking of the CPU is not a terribly good thing, over-clocking of the system bus can do wonders for performance. Some motherboards have the ability to set the system bus speeds higher than 66MHz which is the norm with Pentium based systems. Motherboards that support the Cyrix 6x86 PR200+ can already have their bus speeds set to 75MHz to accommodate this processor, which runs at a clock speed of 2 x 75MHz = 150MHz. This is mainly what gives the Cyrix 6x86 PR200+ its grunt - having its memory, L2 cache and PCI slots all running from this faster bus speed certainly helps. There are some other motherboards around that can even support 83.3MHz bus speeds. So instead of running your Pentium 166MHz at 66MHz with a clock multiplier of 2.5 you could run it at 83.3MHz x 2 giving a noticeable performance boost without over-clocking the actual CPU. There is one problem, for this sort of bus speeds you will have to have some pretty fast SDRAM or EDO DRAM installed, also some PCI cards might have a problem with the increased PCI bus clock from 33MHz to around 41MHz. Here is a list of the possible bus speeds and processor clock multipliers and the resultant processor speed.



Be very, very careful if you try to over-clock your CPU



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Accelerate your world.

NEW AGE SOUND

The future is loud and clear

As the PC continues to evolve into the centrepiece of our daily lives, audio technology is finally advancing to the next level. Derek dela Fuente and Paul Rigby report on new vibes.

Nearly everyone wants higher-quality sound on the PC. In an effort to improve the quality of PC audio and to solve a problem that has long confronted PC audio designers, several companies have joined forces to develop an audio specification called Audio Codec '97 (AC '97).

AC '97 defines an audio standard. It is an analogue/digital audio combination that should completely eliminate some of the problems associated with PC audio, while simplifying others.

One big problem for manufacturers has been expense. While combining digital logic with the present system of analogue technology can reduce costs by reducing the chip count, they do have a downside - they're difficult to design and expensive to manufacture. So AC '97 proposes to ease that problem. The hope is that sound-chip companies will eventually be able to

focus on improvements to the analogue side of the chip only, while traditional chip companies such as Intel will build the digital portion into their chip sets.

MAJOR PLAYERS

AC '97 is the offspring of the seemingly unlikely alliance of Intel, Analogue Devices, Creative Labs, National Semiconductor, and Yamaha.

It is a specification for a programmable DSP-based digital-audio accelerator. An AC '97 accelerator offers wavetable synthesis, multichannel digital audio and MPEG-decoded audio mixing.

As a two-chip solution, with one digital chip and one analogue chip,

the AC '97 approach can minimise mixed-signal noise and allow controllers to be created that are easier to combine. The alliance has not ignored a fully digital solution. Even though digital audio is on the way, companies do not want to ignore the sound card market of existing analogue sound sources, such as Redbook CD, sound board mic-in and line-out, TV tuners, video-capture cards, etc. The new solution calls for a mixed analogue/digital chip that actually lowers the cost of integrated audio. Essentially, this combination-chip solution is cheaper than any of today's solutions mentioned above.

The first move made by the new group was to increase the current audio sample rate from 44.1KHz to 48KHz. This provides more flexibility and allows 20-bit resolution for

every sample versus the current 16-bit resolution. Because more data is being collected, greater clarity in the audio output is expected. Compatibility, with current 44.1KHz, 16-bit samples will be maintained.

Further, the new AC '97 specification also features support for a modern interface, 3-D audio, sepa-

SURROUND SOUND BOARDS AND DVD

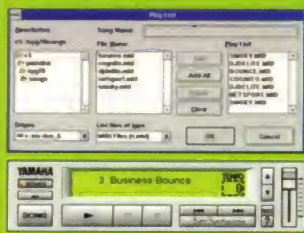
While new Surround boards appearing on the market do improve your desktop listening, there just aren't that many titles out there that support it; you may find more games appearing this Summer and Winter that take this feature seriously. In that setting, as long as you're willing to set up the extra speakers and amplifiers, this board offers an inexpensive means of exploring home theatre. If you're thinking ahead to DVD, don't bother. The Surround won't decode the Dolby AC 3 signals that DVD will use and most DVD controllers will have that built-in, anyway.



MIDPLUG

There are plenty of audio players and streaming software packages (i.e.: RealAudio, Xing, Shockwave, etc.) for use within your favourite browsers on the Internet. However, if the sound quality you're getting from MIDI files embedded on Web pages doesn't exactly thrill you, jump over to Yamaha's site (www.yamaha.com) and download a free beta version of MIDPlug. A helper app for Netscape, Version 2.01 or later. MIDPlug is a soft synthesiser that brings wavetable quality to the rendering of embedded MIDI.

Regardless of whether you have an FM synthesis or wavetable audio card, MIDPlug can improve the quality of what you hear. MIDPlug also supports the majority of XG extensions to General MIDI, so files that use XG instruments may



"As a two-chip solution, with one digital chip and one analogue chip, the AC '97 approach can minimise mixed-signal noise and allow controllers to be created that are easier to combine."

AUREAL 3D SOUND

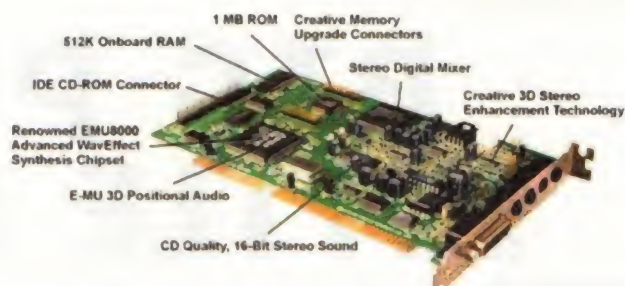
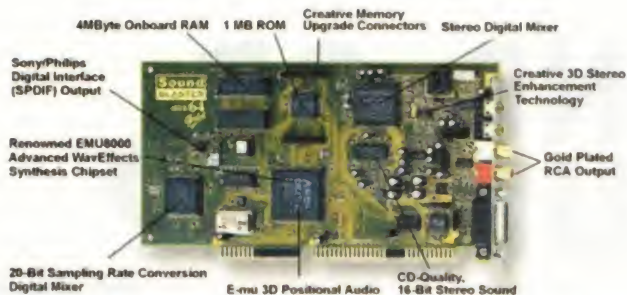
The latest, on-the shelf, product from Aureal Semiconductor is a new 3-D positional audio algorithm that will debut in products from Diamond Multimedia and Oak Technology.

Aureal's A3D positional sound will feature in the OTI-610 PCI audio chip from Oak and the Diamond Monster Sound PCI-based accelerator card.

Additionally, Aureal is reporting wide support for A3D from game developers, including Activision, Electronic Arts, LucasArts, Maxis and Virgin Interactive and expects titles incorporating the algorithm to hit store shelves as you read this. The Oak audio controller is said to deliver multiple audio channels when combined with Microsoft's DirectSound API for playback of music, special effects and positional 3-D audio.

The Diamond Monster Sound also supports Microsoft's DirectX APIs under Windows 95. The board is capable of up to 24 independent audio streams and a signal-to-noise ratio greater than 80 decibels. Both the Oak and Diamond devices will support Microsoft's impending release of DirectSound 3D as well.





Creative Labs were in on the group that developed AC'97, so you can expect their sound cards to keep up to date

rate headphone outputs and tone-control features. A big relief to many manufacturers and users is that AC '97 is designed to provide

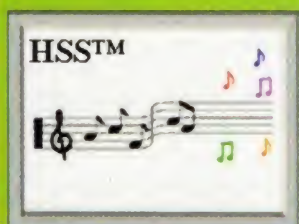
FANTASY SPEAKERS?

Imagine a pair of cookie-size devices that weigh next to nothing and generate crystal-clear stereo sound seemingly out of thin air. Fantasy? Not if HyperSonic Sound technology lives up to its hype. Developed by American

Technology Corporation (ATC), a tiny, San Diego-based electronics company, HyperSonic Sound uses minute transducers to emit ultrasonic waves outside the range of human hearing. But when these waves interact in mid-air, ATC claims, they generate high-fidelity audio that rivals the audio kicked out by your bitchin' monster stereo speakers.

The proof, however, will be in the listening, you'll not be able to judge for yourself until around mid-year, when these devices will reach the market. Each gadget will be "about as thick as two credit cards," says HyperSonic Sound inventor Elwood Norris. Speaker manufacturer Carver Corporation has already licensed the technology and about 30 other high-tech firms are interested in HyperSonic products. Will HyperSonic Sound come with a stratospheric price tag? No one's quoting numbers yet, but stay tuned.

For more information, use your Web browser to access: www.atcsd.com.



all of this while maintaining Sound Blaster compatibility. Even better, it will give you stereo sound at the BIOS level which means you don't need any drivers. I can hear the cheers from here.

DOLBY 3D SOUND

On the subject of 3D, Dolby are pushing their AC-3 interface as a 3D standard.

The AC-3 specification provides for as many as six channels of audio. The 5-1 channel system includes front right, front left and centre; rear right and rear left; and the subwoofer. These can be separate speakers in a surround-sound multimedia system or can be synthesised from a pair of enhanced front-channel speakers.

Intel's RSX 3D uses MMX instructions to decode a Dolby Digital bit stream. Virtual speaker technology generates five channels from two speakers. The decoder could also deliver 5 discrete channels to a multichannel sound card or stream it through the Universal Serial Bus (USB) for external decoding on USB-enabled speakers.

Cirrus Logic's Crystal Semiconductor operation will introduce an AC-3 audio accelerator that ties to the PCI bus, Dolby certified Intel's Realistic 3D Sound Experience, RSX 3D, as a software AC-3 decoder. The Crystal Semiconductor CS4610 decoder generates the six channels in hardware. The chip works with either MMX or non-MMX PCs.



MORE FEATURES

As well as high-quality samples at 48KHz; it also supports Sound Blaster compatibility, FM and wavetable synthesis, optional DirectSound acceleration and Dolby AC-3 decode. In addition, an AC '97 digital component could be a dedicated sound controller, like Yamaha's OPL-3. Alternatively, an MPEG-2 decoder chip could gain audio functionality.

A digital chip using the new speci-

MIRO COMPUTER PRODUCTS MIRO-MEDIA SURROUND

Many gamers believe that a Sound Blaster AWE32 - or even 16 - plus a decent set of stereo speakers and maybe a subwoofer is as good as it gets. Not so. miro's miroMedia Surround board, an ISA board that adds a Dolby Pro Logic Decoder to your PC is here to prove it.

Games such as Ubi Soft's POD are showing up with sound tracks and effects that have been encoded in the same Dolby Pro Logic processing that makes home theatre so head-turning realistic. That's because Pro Logic adds a separate centre channel to keep dialogue centred on the screen and sends more distinctly separated sound to both the front and rear speakers. The Surround also packs JVC's 3D Phonic Surround system, a pseudo-surround effect that requires only two speakers and sounds much like Spatializer or SRS.

Overall, the results are good. On POD, the sound of the various cars

and effects generated by the landscape becomes more distinct and thus more engrossing.



fication would create WAV files from all digital-audio data, including communication audio. It would then turn that data into positional 3-D sound, eliminating the need for third-party, 3-D solutions. But don't throw away your Spatializer or Dolby 3-D analogue speakers just yet. Positional sound under AC '97 requires digital speakers. Currently, several companies, including: Creative Labs; Crystal Semiconductor; Oak; VLSI and Yamaha are working on digital chips. In fact, Creative Labs say that they are designing a digital component that will be 10 to 12 times more powerful than its current offering.

THE BEE'S KNEES?

The first samples of the AC '97 controller should be available sometime this spring and there should be mass availability by December 1997. You can expect to see the first implementations on motherboards, probably the 64-pin package on midrange-to-high-end designs.

Imagine a pair of cookie-size devices that weigh next to nothing and generate crystal-clear stereo sound seemingly out of thin air.

BIG POND OR LITTLE PUDDLE?

The pitfalls of Telstra's cable modem service examined by Jere Lawrence

Telstra Big Pond they call it. If ever anyone were to describe the Internet. A great big pond would be a brilliant analogy to use. This clever analogy however makes it easier for us to point out Telstra's megalomaniacal controlling of this "big pond" from a raging roaring river of rapids to a tiny sluice.

TCP/IP - INTERNET EXPLAINED AGAIN.

For those who have more of a life than to sit reading wordy technical manuals on computer protocols you probably don't know how TCP/IP within the Internet works. It's actually quite simple and ingenious at the same time.

Basically, TCP/IP, the [T]ransport [C]ontrol [P]rotocol resting on the [I]nternet [P]rotocol allows data from multiple applications to be organised and distributed. The organisation process is actually called a TCP port. A port, as in a place for a ship to dock, adds wonderfully to our big pond water analogy.

These ports are all numbered a certain way and the ships that leave the sender's dock carry the port's number. The ships are essentially the data you send. For example, if

you were sending email, you could imagine the process like this.

Once your message is finished and you press the send button, TCP port 25 is opened. Trucks roll out with your message and fill ship number 25 up at port 25. Once the data is all loaded up into the ship, it leaves port 25 of your computer, goes across the great "Big Pond" to its destination, docks at port 25 there, unloads the data from the ship to the trucks and transports it to the recipient's mail program.

Pretty nifty isn't it? Even niftier is the fact that there is literally an infinite possibility for the allocation of TCP ports. Port 25 is for sending email, port 80 is for the World Wide Web, port 65,000 could be for Super wow VR program X of the future. Currently, an average Unix box could have over 7000 ports documented in its services file.

THE RIGHT WAY. THE TELSTRA WAY

All these ports are wonderful. They're literally the essence of the entire Internet. Not to Telstra though. Where every service provider in the country offers access to the internet over any port they desire, Telstra is using a Firewall to make sure that only a relatively small few are accessible to the cable customer. They offer these services only, web access, e-mail and news, ftp, telnet, IRC, RealAudio, and RealVideo. That's 8 ports out of a potentially unlimited number, which sucks.

Ultimately this means that the game of ultra fast Red Alert you were dying to play with a bunch of mates over Telstra's cable network will not happen, as Red Alert uses port 5009, which is not accessible through their firewall. Quake too, not a chance. The only data you're going to get from Telstra are from the ports that we listed before!

THE BACKLASH BEGINS

Needless to say, we're furious. This kind of control that Telstra is attempt-

ing to enforce on the innocent individual is akin to a time back in the early 18th century. Like a bizarre scene from Oliver twist, if we want access to a particular TCP port which everyone else in the world would have access to, we would have to approach on bended knee. Asking Mr. Bumble (an appropriate name to analogously link to Telstra) "Please Sir, I want some more". Just like in the movie, you can imagine the response.

Short of using an impressive number of expletives with which to describe the situation, we thought it only fair to hear Telstra's side of the story. We spoke to the perky Myrna Van Pelt, Manager of Public Relations Telstra Multimedia, and put the hard questions to her.

1. How would you describe the Telstra cable network i.e. the service you offer to the customers?

It's a premium product using the latest technology. The Big Pond Cable Internet product offers customers a high speed communications system from their home to the Internet and Internet related products including the World Wide Web, email, news groups, file transfer, Internet relay chat and Telnet.

2. This product is more than an Internet service though. It's a high speed data delivery system in the home which equips our customers with a platform for future services.

With a unique home page at the cutting edge of broadband multimedia technology, it utilises visuals, sound and video. It's a showcase for what the Internet is supposed to be like. The site delivers full screen streaming video, CD quality streaming audio, high resolution virtual reality displays and samples of online games. The product has several features and benefits key to the target market, which are frequent Internet users.

In summary the benefits are:

- High speed in both directions;
- Ready when you are

- when your computer is on, you're on the Internet;
- Quick and easy to use - no dialing, no waiting and no more busy signals;
- Keeps your phone line free
- no need to add a second phone line

Powerplay responds:

Due to the "formal" nature of the responses, we felt some points needed explaining, or more importantly, refuting.

QUESTION 1

"It's a showcase for what the Internet should be like". If you're not still laughing over this one, we found the answer to be delectably ironic. A few pretty videos is what the Internet is about? We think not.

QUESTION 2:

We don't believe the issue of Hackers is debatable either! In order for a hacker to gain access to an individual's PC, a program (or server) must be running in order for this to occur. On your home PC, you would have to be running a telnet server, or Web server etc. in order for people to access your machine! A copy of Windows 95 setup out of the box cannot be hacked on the Telstra Network because quite simply, there's no software running on it that could respond to an access request.

QUESTION 13.

This answer is really evasive. The reality is whether by cable modem, modem, tin can or carrier pigeon, TCP/IP will work the same way. The servers they would have set up to utilise the Internet, on a software level would be no different to the setup at any modem-based ISP such as Magnadata or IBM.

FIREWALLS

A Firewall is a handy little device to prevent hackers from breaching your network. It's sort of like a massive customs dock with in the port. Using the ship analogy. When the ship pulls in at the port, the data instead of being unloaded into the truck for transport is first interrogated by the customs officials (firewall). If the port is banned by the customs area (firewall) then the freight is rejected, the contents destroyed and the ship told to be "on its way". A number of companies use firewalls to ensure that unpleasant hackers cannot breach their network and examine their confidential data.



(l to r) Mark Whitmore, Duncan Moncrieff, Glenn Law, Jane Fowler, Richard Noonan, Andrew Martyn

- A new communications system in the home.

3. Why do you firewall off so many ports for your customers?

The service has been configured to maximise performance as well as simultaneously maintaining the integrity of the system. Many of the issues surrounding firewall port access involve security to service. Any potential changes we make to the firewall will always have to be balanced with the desire to maintain the integrity and security of the service. We are currently considering all our customers' requests which include making more ports available. We also hear from customers who have expressed their sense of comfort and the security that the firewall affords them.

4. You keep on making claims of security! What are you protecting everyone from?

We believe the network needs to be secure. We don't believe the issue of hackers is debatable, it's a reality and more to the point it's an issue to many of our customers.

5. Why can't people BEHIND the firewall access each other on unlimited ports?

The question implies a number of things - they can email each other - but in terms of directly accessing PCs we have set our network up so that one person cannot access another person's PC by choice. We protect our customers by explicitly designing the network so that it deters people from probing around other people's PCs.

6. Why do you not offer permanent IP addresses?

Our whole network is built around dynamically assigned IP address. This system allows us to make more efficient use of the IP address space and make efficient use of the available number range.

7. Was Telstra Cable Internet an attempt to rekindle lost causes such as Viatel and Discovery?

No. Discovery has migrated to Discovery 2 and services such as Viatel have migrated and developed into other products and service more relevant to the dynamics

of the Internet environment.

8. Were you trying to create a controlled environment where your own services came first and the Internet was a secondary point?

No. The strategy behind Telstra delivering a solution for High Speed Internet Access was based specifically on Internet Users demand for increased speed and improved bandwidth.

9. If you persist with the firewall, will you install your own internal servers for playing games among other things? If you do, will you charge people to use these servers?

We are considering further product developments and it is likely that these will include games. Charging has not been an issue that has been discussed.

10. What have been your customers responses to the firewall and the immense restrictions placed on them?

In my opinion, what you refer to as immense restrictions probably refers to only 1-2% of all applications that our customers would normally access on the Internet. Having said that, we are keen that this product offers the best that is available. We will actively look at making all applications available, whilst continuing to consider and maintain the integrity/security of the service.

11. Were these restrictions put in place because of fear of telephony over the Internet?

No. The issue is security not telephony defence, and attending to customer demand for faster, more efficient Internet access. We are currently looking at telephony over the Internet for our entire Big Pond Product suite. This is a key area of development and we are cognisant of the growing trends. Whilst Telstra currently has a dedicated and quality PSTN network etc - we continue to look at all emerging technologies.

12. Is there the possibility that the firewall will be dropped?

No. The firewall will not be dropped. It's part of our network architecture. However, we are considering changes to the firewall to attend to our customers needs.

13. Why is Big Pond Home offering unlimited ports and FULL Internet usage for its customers? Yet the cable customers are not offered the same service!

The two services are based on different architectures. The design of the Big Pond Cable Internet is a complex system which includes a marriage of the network and the server complex.

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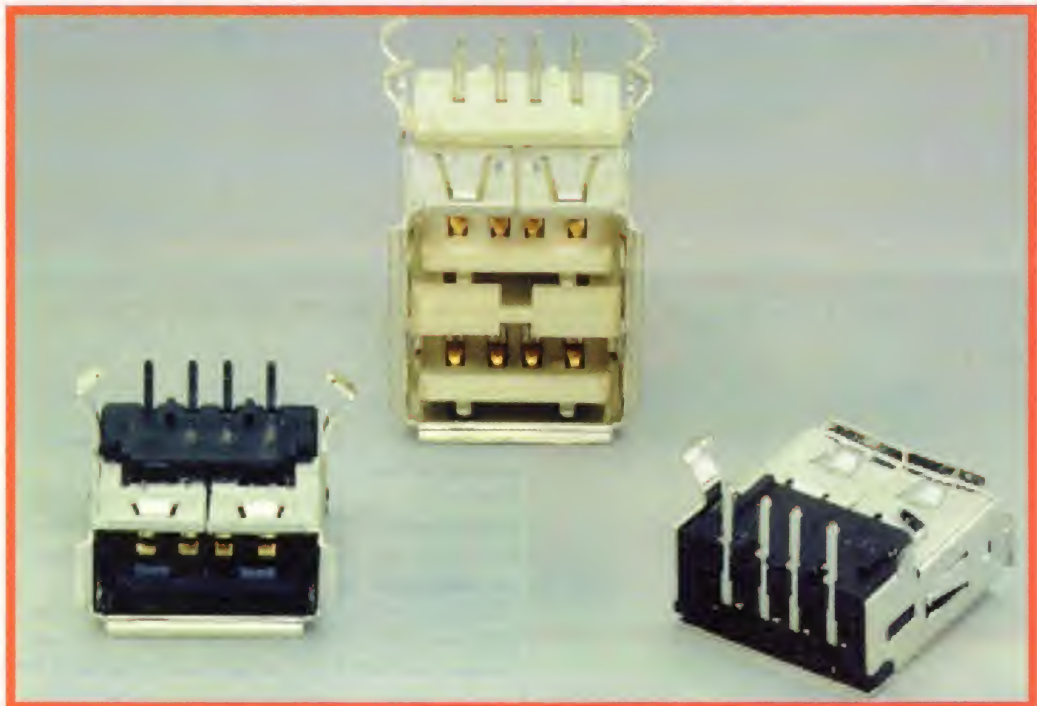
USB and Firewire mark the end of the configuration blues.

PCs today have a wide variety of ports to connect your external devices to, serial ports, parallel ports, keyboard port, bus mouse ports, games port... There has to be an easier way to connect devices to your PC, something that will do away with the mass of spaghetti wiring that protrudes from every connector on a heavily populated PC. If you need to connect a printer, there's two choices; serial port or parallel port, most will plug into the parallel port, but what if you need to plug something else there like a Zip drive? Looks like a switch box might be needed, painful.

Same goes for the serial ports. There is usually only two of them, so if you want to connect another device other than your modem and mouse then you will need to invest in another serial port card. Then trying to get the damn card to work can be a nightmare, changing jumpers and deciphering strange cryptic settings only to find that the IRQ you want is being grabbed by your Plug and Play aware sound card. Salvation is around the corner with the development of two new ways of connecting peripherals to your PC.

PLUG AND PLAY - REALLY!

USB (Universal Serial Bus) is the first of the new breed of ports to



USB & Firewire - Salvation for anyone who has trouble understanding manuals. i.e everyone, mainly

offer a light at the end of the tunnel. USB allows easy peripheral expansion without the need to remove the PC's casing or worry about IRQ's and I/O addresses. USB is a new serial bus standard that is supported by big name companies like Compaq and Microsoft, to name a few. Basically it allows the attachment of peripherals ranging from modems to monitors to telephones, all through a standard port connection.

Another emerging standard for external peripheral expansion is the IEEE-1394, or Firewire as it's commonly known, this allows external devices to be attached that require greater bandwidth, like DVD players and Digital video recorders.

USB

Universal Serial Bus offers users a very simple way of attaching low to middle bandwidth devices to their systems. PCs equipped with a USB port can have up to 127 devices attached simultaneously in a daisy chain fashion. I'm sure that's more than enough for most users.

USB has a maximum throughput of 12Mbits per second, you may think that this isn't much, but remember older style serial ports could only reach maximum speeds of 115Kbits per second. As you may have guessed, the USB port is intended for peripherals that do not require massive amounts of bandwidth, like keyboards, mice, printers, and low-end scanners. Advanced gaming peripherals like VR gloves, helmets and advanced joysticks should also be definite candidates for USB connections, providing an easier way of connect-

ing such devices without the need for dedicated cards to be installed for each type of peripheral.

USB devices interface with your computer by using a connectors like the one you see on this page. These connectors can also carry 5 volts of electrical current so devices attached to the USB port may not need their own power supplies. Of course, bigger devices will need external power supplies. USB is also fully Plug and Play aware, meaning there is no need to mess around with IRQs or I/O addresses when installing new hardware. All that is needed is for the user to plug the USB device in and the operating system will do the rest, it will configure the device with a unique address, then load the necessary device driver for you (about time too!). USB also supports hot swapping, meaning devices can be connected or disconnected while





Firewire can handle up to 63 devices attached and also offers true Plug and Play operation, just like USB. The similarities to USB end there though, as Firewire can handle data rates of 100 - 200Mbps per second, with data rates of 400Mbps per second and 1.2Gbits per second being developed as we speak.

Watch out for Firewire hard drives to start appearing at 200Mbps per second transfer rate. This certainly beats the hell out of even the fastest hard drive's we have now, Ultra-Wide SCSI which max's out at 40Mbps per second. Firewire also totally wipes the floor with present mass consumer hard drive standards, ATA-IDE reaches speeds of only 16.6Mbps per second, even the new Ultra-DMA33 IDE can only muster 33Mbps per second peak.

Firewire will initially be confined to the high end video editing and server markets. Devices like DVD players, digital video cameras will all benefit from Firewire's impressive transfer speeds. Don't expect Firewire to appear in off the shelf PCs anytime soon, as Firewire does not have a low speed option. A combination of USB and Firewire ports should cover all possibilities, though.

THE NEW WAY

PC peripheral installation using USB or Firewire is going to become what Plug and Play cards should have been - easy expansion of your PC. Gamers can expect USB joysticks and game controllers as well as USB speakers, USB keyboards and USB modems to name a few.

USB and Firewire will effectively make the PC itself more appealing to the general public, as there would never again be a need to remove the cover of the PC, which a lot of games players would be eternally grateful for.

Garry Wallis



"Peripheral installation using USB or Firewire is going to become what Plug & Play cords should have been"

is a USB port attached and that Windows 95 OSR2 is installed on to the PC. If you already have a PC and it's relatively new, then

you may find that your motherboard has the relevant pin outs for USB connectors and the necessary logic, but has no physical connector attached. These systems may also require a BIOS update to function correctly even when a USB port is attached to the pins on the motherboard. Talk with the people who sold you your PC to see whether a USB port can be added and at what cost. On the

older motherboards (486 motherboards and pre Intel Triton II chipset Pentium motherboards) a separate PCI card may need to be purchased to give you one or two USB ports.

USBs maximum transfer speed of 12Mbps per second rules out its use for high speed equipment, but another serial bus standard IEEE-1394 or Firewire as it's commonly known should fill this gap.

FIREWIRE

Firewire is another new serial bus standard that has been designed to compete with the ageing SCSI bus standard and the other proprietary high speed external connection methods.

the PC is still running, without the need for the system to be rebooted.

USB devices are slowly starting to appear, but are quite rare compared with peripherals using the old standard type ports. There are a few monitors around that support USB and have 3 or 4 USB ports on them, the monitor can then act as a hub for the connection of other USB compliant products. A USB hub is necessary when connecting multiple devices, as most USB peripherals will not have pass-through connectors for the connection of other devices. The amount of available USB products will certainly increase in the near future as more and more vendors jump on to the USB band wagon.

If you are wanting to take advantage of USB devices now, there is currently only one operating system that natively supports it straight out of the box, which is Windows 95 OSR2 (OEM service release 2 version 4.00.950 B). When purchasing a new PC, make sure that there

Connection types and their relative throughput

Connection standard	Bus Speed	number of devices that can be attached	Effective Throughput (Mbps per second)
Std Serial port	serial	1	0.1152
Std Parallel port	Parallel	1	1
USB	serial	127	12
FireWire	serial	63	100-400, 1200*

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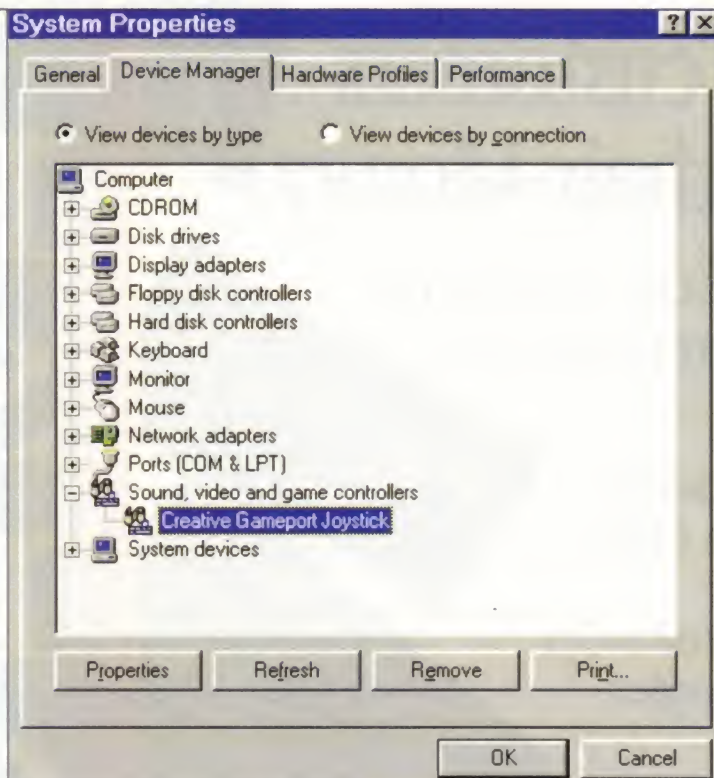
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Joystick problems? Ask tech-boy Ashton!

JOYFUL STICKS

>q I recently got a Creative Labs Sound Blaster Pro 2 for my computer and am unable to play any games which require a joystick as there are no gameports turned on. How do you turn gameports on as I have Thrustmaster Formula T2 and I don't want it to go to waste.

Thanks,

Adam Wilson

Internet

>a In DOS your joystick port should be enabled by default. Any games you play shouldn't have any trouble finding your joystick. Windows, however, is a different matter. You won't be able to play joystick games in Windows 95 unless you install the joystick driver. To do so open up Settings → Control Panel → Add New Hardware. Then say 'no' when it suggests it should find hardware. Next select 'Sound, video and game controllers' and then under 'Microsoft' select 'Gameport Joystick'. You'll need your Windows 95 CD for it copy the drivers from. After you reboot you should find a Joystick device under the

dramatic decrease in the performance of my Intel P120 and after playing the MDK demo on your CD last month and using the performance option it rated my system as below that of a P90. So could this performance decrease be attributed to the CPU and if so would I be able to get a replacement under warranty?

3. Third and final question. The computer I use at home is connected to another computer which allows me to connect to the internet. But after purchasing a 3D Blaster and Quake, for some reason I have an uncontrollable urge to frag some living opponents. So, do you know if there is a proxy program that will allow the net connected computer to act as a gateway.

Rees

Internet

>a 1. Surround sound using two cards isn't an easy or widely supported thing.



Device Manager in Control Panel → System. If you click on Control Panel → Joystick you'll find some options that allow you to configure what type of joystick you have (for which the Thrustmaster range is one).

MIXED BAG

>q I've three questions for the infinite wisdom you guys always seem to display.

1. After reading last issue, I noticed you said that it was possible to have two sound cards in the one computer to experience surround sound. My first question is how do you do this?
2. A little while ago I noticed a

Putting a second sound in is easy. Configuring it to use different IRQs and DMAs to your first sound card is relatively unproblematic. Using both at the same time, however, is! For a start you'd need to hook up another two speakers to the second sound card — easy if you're using crappy small computer speakers with a headphone jack, not easy if you normally use an amplifier to get real sound through real speakers. The amp normally only has two RCA jacks for left and right for each source. So, you'd need a second amp. Or you could buy a multichannel

amp, which you need for real TV surround sound anyway (which means you'll be buying a second amp nonetheless).

But all this is irrelevant if you don't have software programmed to use both cards at once. In my time I've only ever seen one program to do this — a DOS MOD player called Cubic that allows you to pipe sound out through two Gravis Ultrasound cards. Best way to get surround sound is to buy a surround sound amp and leave it up to the Dolby codes for simulated surround sound!

2. Do you know what caused your P120 to run much slower? Did any program make a difference or have any BIOS settings been changed? CPUs don't normally suddenly change their performance, they either die or don't die, and even this takes a very long time. You could upgrade your CPU but I think it's best you try and figure out what may have caused the drop in performance and fix it. A clean and new install is an easy option. If it's still there, take the machine back to where you purchased it and ask them to find the problem. Ignore the performance value MDK gives you, it's only performing some basic tests and it's by no means a reliable benchmark of your machine's performance.

3. There sure is. An excellent little program called WinGate is freely available on the Web and will let you access the Internet through another machine with a connection. Just follow the docs and it'll work first time.

MEMORY IS MADE OF THIS

>q I'm struggling with my conventional memory. I need 570k at least for Origin's game, Privateer. The trouble is, I've just upgraded my hard drive to cope with Drive Space 3. It takes up heaps of conventional and I can't put it in Upper Memory. Help! I didn't have a problem before.

Ashley Angus
Perth, WA

```
Autoexec.bat
SET SOUND=C:\SB16
SET BLASTER=A220 I5 D1 H5
P330 T6
SET MIDI=SYNTH:1 MAP:E
C:\SB16\DIAGNOSE /S
C:\SB16\SB16SET /P /Q
LH /L:2,26512
C:\WINDOWS\COMMAND\MSCD
EXE.EXE /S /E /D:MSCD001 /M:5
/V
PATH C:\WINDOWS;C:\WIN-
DOWS\COMMAND;C:\ASH
LH /L:2,12848
C:\GAMES\CC\MFL.EXE
SET TEMP=C:\WINDOWS\TEMP
```

```
Config.sys
DEVICE=C:\WINDOWS\HIMEM.
SYS /HMAMIN=63
DEVICE=C:\WINDOWS\EMM386
.EXE RAM HIGHSCAN I=Booo-
B7FF WIN=B500-B7FF
WIN=B200-B4FF
BUFFERS=22,0
FILES=30
DOS=HIGH, UMB
LASTDRIVE=Z
DEVICE=C:\WINDOWS\COM-
MAND\DRVSPACE.SYS /MOVE
DEVICEHIGH /L:2,27056
=C:\SB16\DRV\CTSB16.SYS
/UNIT=0 /BLASTER=A:220 I:5
D:1 H:5
DEVICEHIGH /L:2,25456
=C:\SB16\DRV\CCD.SYS /P:220
```

```
/S:Do /T:1 /D:MSCD001
DEVICE=C:\WINDOWS\SETVER.
EXE
```

```
DEVICEHIGH /L:2,10592
=C:\SB16\DRV\CTMMSYS.SYS
```

>a I have to ask: Drivespace 3, WHY? With the price of hard disks nowadays there is, quite seriously, no reason whatsoever to use disk compression software. It's an obsolete technology that is no longer required and has so many drawbacks, one of which you've already discovered. Because your disk is com-

pressed, you need to have the DRVSPACE drivers in to access your disk, and this takes up memory permanently. Still, we can squeeze a little more into your system, starting with the CONFIG.SYS: Remove the /HMAMIN switch, it won't make a difference. Remove the WIN= lines from your EMM386 line. If you want to use Windows, make a second boot tailored for Windows. For DOS you want it to be clean, so I'm assuming you're going to make the changes I suggest here and make it your first boot option (how to make multiple boots? Read up in the DOS help files). Set your LASTDRIVE= to a lower value.

Try to use DEVICEHIGH on your DRVSPACE.SYS lines. Most disk compression software recommends against doing this, but some products seem to work fine in high memory. Load these lines high (if they can) at your own risk.

Remove SETVER, don't need that.

Remove your SOUND BLASTER lines (except the CD-ROM line). Your

card should (but no guarantee) work fine with just the SET BLASTER= and DIAGNOSE lines in your AUTOEXEC.BAT

You might also try removing the /L: parameters. DOS will load your programs in a best-fit manner anyway and sometimes this is better than what mem-

maker can find. Generally, though, you've shot yourself in the foot using Drivespace 3 AND Windows 95. DOS 7 from Windows 95 is already a huge memory hog and adding Drivespace to it has made it practically impossible for you to achieve high free memory.

Your other option is to install DOS 6.20 and make a lean mean DOS boot with just HIMEM and a few other lines. The problem is, DOS 6 can't co-exist with Windows 95 so you'll either have to boot from a floppy or purchase third party multi-boot managing programs like System Commander that allow you to use DOS 6 and Windows 95 together. Also, whenever you do make a final fast DOS games boot, ALWAYS use the HIMEM, MSCDEX and EMM drivers from your \DOS directory, not \Windows.

more setup
over...

>q >a

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MORE RAM NEEDED

>q I have a 386SX 25Mhz PC with 4M of memory oodles of hard drive a Adlib Sound Card and a Microsoft Mouse.

I have Return to Zork but it does not have any Sound or Voices, only Music.

I am only 9 years old could you please help me?

George Bisbikis
Balgowlah, NSW

>a It's good to see a games player starting so young! But I'm afraid there's not a lot you can do for Zork. With only 4M of RAM I'm not surprised you're not getting any sound effects or voice. In fact, I'm surprised you're actually running Return to Zork on 4M of RAM. About the only thing you can do is to disable music and enable sound effects and voice — all three of these suck up a lot of RAM and your system is probably only capable of doing one of them at a time. By disabling music you should hopefully make room for sound effects and voice.

INTERNET GAMING

>q I own a 686/P120+ with 16 meg of RAM, a 16bit Soundblaster card and an old 1/2 meg Trident video card. I have a few questions I would like to ask. 1. I frequently log onto Games Universe to play SERIPX. I am not currently registered. Whenever I play a SERIPX game against others the game jerks very badly when I'm around other Dukes in Duke 3D. I was wondering if I bought a 64bit PCI network card if it would stop jerking? As I currently have no network card.

2. Also, I have only a 1xCD and it runs tons of games that say on the games minimum requirement section 2xCD required to play? I can play NFS (SE), Warcraft 2, Worms, Magic Carpet 2, Syndicate Wars and Dark Forces. They take a while to get into actually playing but they run smooth. Why is this?

3. Lastly, would I be able to play Red Alert on a 1xCD and NBA LIVE '97? As I am buying both shortly and I can't be stuffed getting a new CD drive.

Thanks for your time.

Eliot Sotriou
Brunswick, VIC

>a 1. I'm not surprised. Your video card is rather old and doesn't perform very well with games, but your main problem is that you're playing games through your modem when you log onto Games Universe. Modem's aren't particularly spectacular devices to play games over, although this depends on the type of game and the method you use to connect with other gamers. There's not a lot you can do to decrease jerkiness here. Have you closely followed Games Universe's instructions for modem play, especially any references made to enabling or disabling compression? Your only other solution is to upgrade to a faster modem. That's just the way it is, bud.

A 64bit PCI Network card is definitely what you want to play games over, but will do jack diddly for your situation. A network card is used to allow your PC to communicate over a network — which themselves are connected (more commonly) by coaxial or twisted pair cables. Using your modem to play games over the Internet or games provider is performed through your rather limited serial port — a communications device built into your PC and completely separate from networks.

2. A single speed CD spins at around 150k/sec, a double speed at 300k/sec and so on. No matter what the speed your CD-ROM it will always be able to read and play games released on CD. The reason you see some games recommending a minimum speed simply has to do with playability. They may recommend a 2x CD-ROM because they feel you won't get much enjoyment playing the game on a slower CD-ROM — it's not impossible, just less fun. Generally it's good idea to try and meet the minimum requirements and, if possible, exceed them.

3. Red Alert should work fine with your 1x CD-ROM, apart from taking a long time to load. Just turn off in-game music so your game won't be slowed by the CD trying to load music. It's good to see such dedication to games!

Random Access

Welcome to Random Access, a column dedicated to interesting, useful and informative tips about anything and everything to do with your PC. Be it hardware, software, DOS or Windows you'll find tips and tricks listed here every month. If you have some tips of your own you'd like to share with other gamers such as yourself feel free to send your tip into Setup and, if we publish it, we'll be sure to credit and print your name.

MORE WINDOWS WONDERS

Remember last month when I said to ignore anything Windows recommends, because it has absolutely no idea what it's talking about? Well another fine example of Windows 95's ability to be inefficient is its handling of the internal cache. You see, Windows 95 has a dynamically resizing cache. The concept is good — it means the cache will shrink itself if more RAM is required for programs — but it's been poorly implemented. Generally Windows 95 will allocate anywhere between 10% and 50% of your RAM for the internal disk cache. On a 16M system you could be running with an 8M cache, and on a 64M system Windows 95 allocates 30M to the cache! Talk about overkill.

This is inefficient because when you go to load a program Windows has to make room for it by shrinking the cache (thereby writing to disk any information within it) before it can start reading your program from the drive. Moreover, Windows often prefers to keep the cache at a relative size, sacrificing essential Windows runtime files and loaded programs in memory over disk cache. It all takes time for Windows to flush the cache, read in any information that was previously swapped out due to the large cache size and then read in the program you're trying to load. The solution? Force a minimum and maximum cache size in Windows. You want to create a static cache, one that doesn't resize, and set it to an acceptable limit. For example, on a 16M machine a 2M cache is fine, 4M if you don't intend to load many programs. On a 32M machine, set it to 8M and keep it there. Anything more than 8M is simply wasted memory. On a machine of 16M or less you might consider forcing the maximum to be 2M or 4M but keep the cache dynamic by forcing a minimum of 1M so that, if necessary, Windows can make room for more programs but still keep the cache at a size where it will be useful (anything less than 1M isn't terribly useful).

Set your cache size thus:

Edit your SYSTEM.INI file and under the [vcache] section (if it's not there, create it) add:

MinFileCache=4096

MaxFileCache=4096

Remembering to change these values to whatever values best suit your system and your needs. After rebooting you'll actually have RAM free — it won't be sucked up by the cache. So when you go to load a program it can go right on in to your free and available RAM.

SPEED DEMON, ANYONE?

This is for all you BBSers and Internet freaks. It's not a great performance enhancer, it doesn't fix any bugs or make life any easier, but it is sexy. Well, cool at least.

Get into a nice comfy terminal mode with your modem. If you've never experienced this (quite possibly if you're a Windows user) it means you should open up a communications program and enter 'terminal mode'. DOS users do this anyway, Windows users will have to open HyperTerminal or some equivalent program.

Once in terminal mode issue these two glorious commands:

ATS11=55

AT&W

Now try calling somewhere. Are you impressed yet? Of course you are. There is one consideration, however. Depending where you live your connection to the telephone exchange might not be able to handle the dialing speed. In this situation simply increase the value for S11 to 60 or even 70. What do the two commands do? S11 is the dialing speed register in your modem. &W writes the information permanently.



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RIPPER

? Please help me, I'm stuck in Ripper. I'm in the Wafford's cottage and there are three clocks. Could you please tell me the right times for each clock?

JAMES SAWYER

BRISBANE, QLD.

***** Ok James, here's the answer, try not to read the whole thing, a few initial clues may just help you to figure it out. Set each of the clocks to the appropriate time, using the Time Zone chart.

Did you see the clock in the bedroom upstairs?

Why these particular clocks? What (or where) do you associate with each one?

Pyramid = Egypt

Cuckoo Clock = Germany

Army Clock = USA

Time in USA is 2:35. Germany is 6 hours later. Egypt is 7 hours later. It could be AM or PM.

The answer is: Egypt 9:35PM, Germany 8:35, USA 14:35.

DISCWORLD 2

? In Discworld 2, I have the picnic basket to attract the ants, I capture them, but how do I get them into hex? Also, in Shadow of the Comet, how do you combine the methylated cotton bus with the painting and how do you get past the man at the well without being shot by the Indian?

ANDREW WYLIE

PROSPECT, SOUTH AUSTRALIA

***** In Discworld 2, do this. Go to XXXX land. Go to the right, and use the picnic basket on the anthill. Go back to the beach. Use the saw on the ironing board. Use the ironing board on the surf. Use the camera on the cave paintings. Go to the elven circle. Put the camera in your inventory, not the Luggage's. Use the glue on the hooter. Use the hooter on the horse costume. Use the Librarian on the costume. Put the costume in Rincewind's inventory. Enter the circle. Use the costume on Rincewind. Use

the camera on the Elven Queen. Go to Unseen University, and enter the High Energy Facility. Use the ant filled basket on Hex. Use the wire bits on the pyramid plan. Use the honey on Hex.

Use the Pyramid on Hex. Talk to Skagg, and pick the universe icon. Go to the hermit, and give him the answer. Go to Dibbler, at Hollywood, and give him the band, jingle, novelty, and babe. Go the make up room, and give the elven queen pictures to the make up girl. Talk to Dibbler again. Go to the shades, and use the dead certificate on the door at the far left of the shades, up the steps. Talk to the sheep, using the stunt icon. Give the sheep the cave painting photos. Get the reel, use it on the device. Use the elven queen film on the device.

Shadow of the Comet, do this. - Check your logbook. In your room look in the dresser and take some absorbent cotton and the alcohol out of the drawer. Use them (U) to make a piece of cotton soaked in alcohol and use it to rub Boleskine's drawing, which was in your trunk. You now have the two main clues for locating the Calvary.

To draw a cross on the map, use the two clues you found on the gun at the archive keeper's house and on the drawing you rubbed with alcohol indicate that the location is to the east of the Stalker constellation and to the north of the Beast constellation (the points of the compass are drawn on the sketch). At the point of intersection of these two lines a group of 4 by 2 stars form a small square: the picture zooms in automatically. Look up in logbook.

FATE OF ATLANTIS

? In Indiana Jones and the Fate of Atlantis, I need to enter the Canals in Atlantis but there is an Octopus in the water. How do I get to the crab like raft. Do I have to catch a crab? How?

CHUNKA

WHEELERS HILL, VICTORIA

***** When you get to the crab room, you have to use the rib cage to capture a crab. By baiting it first, you can either use the wad of gum or the sausage in the cage. Put the cage in the pool and you'll catch it. Find the room with the double doors. There'll be a little fish statue that you can feed beads

but the door still won't open. Use a bead in the eel statue and throw it in the water. Then feed the fish statue a bead and the doors will open. Now go to the canal. There'll be a big octopus in the water. Put the crab in the cage in the water. The octopus will leave (with a burp) and you can cross over to the other side. Get onto the crab thing and put a bead in its mouth. Go around (go left) and use the stones on the spindles to open up the gates. You'll eventually reach a section where there's another flight of stairs. Go up and in the room and get the crescent machine part in the cupboard. Close the cupboard door and look at it.

LITTLE BIG ADVENTURE

? In Little Big Adventure, in the temple there are 2 platforms, too high to reach, and 2 levers that are also too high. How do I get onto them to find the book of Bu? I've been trying for 2 months.

CLIVE LEONG

KINGS LANGLEY, NSW

***** Here is the Entire solution for Level 3 - White Leaf Desert, the place where the book of bu can be acquired. When you reach your destination you will be dropped off on some rocks just off the island. Jump across these rocks in the direction of the island making sure you avoid the machine-gun fire emanating from the pillbox on the island. Upon arrival at the beach, use your ball of power to kill any guards in the vicinity. Collect any items that the guards drop, especially the key dropped by the guard nearest the

fence, because you then need the use of this to enter the compound to the south.

Once in the compound, walk over to the desert and approach the old chap with the guitar. After talking to him for a while you'll learn that he's looking for a sacred book which is in the underground temple accessed by the chimney by his side.

Drop down this chimney and you enter a temple. This section of the game is split into two parts. The first part is completed by locating a small white statue and pushing this across traps and platforms to another pedestal. This action will open a door allowing access to the second part of the temple. This can be quite annoying because things happen too quickly for you to consider what you're doing, so you often make wrong moves.

Anyway, when you complete this task with the statue, go through the door that opens and you get to part two. Part two of the temple is 'guarded' by a massive log covered in spikes which rolls down the various passageways, forcing you to fall through gaps in the floor or die! Whenever this approaches you must hide to one side and let it roll past. Apart from this log there are lots of creatures to shoot as well. In the end, if you are very skilful and lucky you will find the Book of Bu which gives you the power to read ancient runes and advances you to the second magic level (resulting in your ball of power turning to green). Once you have the book in your possession, return to the desert, and reapproach the old man who wanted it. He will tell you that you



Discworld 2 - gratuitous Python scene

should return home because you are the heir to some ancient ancestral artifacts.

Okay, so do as he says. Get back to the boat and this time select your destination as Citadel Island. When you arrive run back to your house and locate your cellar then enter the barrel to get to a secret grotto.

Ever since you got the Book Of Bu you are able to read ancient runes, so you can now read the legend on the door. These runes tell that there are locked doors guarding your inheritance (the ancestral weapons) and these can only be unlocked by a key that the pirate LeBorgne stole. It says that this key is now hidden in his treasure.

Now head back to the Citadel Island port. Upon arrival, approach the elephant with the block puzzle from earlier, and buy a ticket off him. Now take the ferry back to Principal Island.

When you arrive, go to The Old Burg area again and chat to the rabbit by the wall. He will tell you that LeBorgne's log is for sale somewhere in The Old Burg. Where else would something be for sale but a shop, you might ask, so head to the shop where you bought the gasoline and Mecca Penguin earlier, and talk to the shop-keeper about it.

Unfortunately the log is no longer for sale because it was just sold to the librarian! Now you'll have to chase after it by running over to the library! When you reach the library ask the librarian about the pirate's log and he will point you in the direction of an elephant at the back of the library. This elephant will read you sections of the book to your heart's content, but the only section of interest is "LeBorgne's Treasure". By listening to this you will find that the treasure's on Proxima island!

Finding out this new information makes Proxima island visible on your Holomap, so you can now travel there straight away. Do this by going back to the military camp again and using the green buggy to get to Port Belooga.

This time, the astronomer's friend doesn't want to take you on his boat so you will have to find some other means of transport to get yourself to the new location. Fortunately, a spheroid is on hand to sell you a catamaran for 200 Kashes. If you do not have enough money, stroll around the area a bit until you do, because this is the only way you're going to get to Leborgne's treasure. When you get enough cash, but the vehicle and set-off for Proxima Island.

SPUD

? Please, please, please, please, please, please, please help us! My friend and I are currently stuck in Spud at the Ice part. When you enter the sub-merged Submarine, there's a rusty door that we can't open. There are also some polar bears talking to each other that we can't get past. *Name not supplied*

***** Talking polar bears huh, Sure you haven't been watching the Coke adds too much? Anyway, here's your answer. Go left to the submarine. Open the hatch on top by using the wheel. Inside is a door that has rusted shut, and an open door, go through this and pick up the Christmas pudding and crack-er from the table behind you. Exit the sub. Go to the hill on the right hand side. On one side you can see a slope leading down from where the railing has broken, and a ramp leading up to the summit. Go up this ramp and the left the reach the sign, "Penguin Heights". Pick up the tennis racquets from the left of the sign, the use the Christmas pudding where the railings have broken. This creates a huge snowball, bowling over the two polar bears blocking the bridge. Go down to the deep snow sign, the across the deep snow, (making sure you have picked up the tennis racquets), to the bridge. Go across the bridge to the arch into the penguin village. The instant Spud enters the village, the penguins sound the alarm; so get ready to run! Run forward, forward, left, right, right, left. Pick up the hard hat on the left and wait. The penguins surround Spud and hit him on the head, but as he is wearing the hard hat, they decide to throw him into jail. Use a gnome, armed with the trumpet, on the Walrus; then when he wakes up, talk to him. When you have taken the key, a penguin guard comes and takes you to the Emperor penguin. Go forward, then right, then forward and talk to the Emperor twice. When he has finished, turn around and go forward, then right and keep going straight on until you reach the Pixie mines. The penguins get out your way, so go in.

THE DIG

? I'm stuck in The Dig. I'm in the Nexus with the purple rod, blue crystal, wire etc. I cannot however, open any of the doors! I read somewhere that you need to attach the wire from the ship to a glowing plant to charge up the door, this didn't work! What do I do?

RUSSELL BRIDLE
MUNSTER, W.A.

Discworld 2 - bangers & mash



***** Into a glowing plant huh? Wow, what have you been reading???? Here's the solution, no glowing plants required. Maggie and Boston climb down to Brink. Brink is dead. Then Maggie decides they should explore separately and leaves. Pick up the shovel. Pick up the plate. Noting the sealed doors, panels, dark tunnel and ramp, go left until you find a purple engraved rod. Take it and look at it and make a note of the symbols. Continue left back to Brink's body. Look at the alcove and place the plate on the bottom. Go down the ramp and access the panel. You have to pick up the unattached lens and place it in its proper position. To do this, enter the following sequence: yellow, yellow, purple, purple, purple, purple, orange (take lens), blue, blue, blue, blue, blue, blue, orange (drop lens). When you have the proper sequence displayed, push the triangular button. This turns the power on. Remove the loose plate and take the blue crystal. Go the panel immediately to the left of the dark tunnel and enter the combination of the purple engraved rod on the panel. This will open the door. Go through the door.

LEISURE SUIT LARRY 2

? In Larry 2, I'm on the cruise ship and although I know you have already answered this, I still can't do it. I have the dip, the fruit, the sunscreen and the wig etc but I still can't change into the swimsuit. The game keeps on asking m to open the right hand side door which contains the big mama. I know how to take the cruise but I still need to know where to change and how/what to type. Also, in Larry 3, when I am supposed to help Bambi in Fat City, I know I'm to fix her video tape, but I don't know what to type and where to stand!

JEREMY REDFERN
HEIDELBERG, VIC.

***** Pay careful attention, this is how you do it! On the boat, you should probably save your game. First thing to do is go into your room, that's the doorway closest to you. Get the fruit from the nightstand. Go into the next room and you'll meet Momma. If you have a saved game right here, I think you'll get a laugh out of what happens if you go near Momma. What you have to do is leave her room and your room, then go back in, and wait until she's not on the bed. Make sure the game is saved!!! Momma has a tendency to come back as you search her room. Open the nightstand, get the sewing kit, close the nightstand, and get out of there. Find the barber shop (Don't worry, there's 5 barber shops in this game) and sit in the chair. Go to the bar and get the spinach dip at the left of the bar. Go to your room and change into your swimsuit. Go to the pool and put sunscreen on. Go into the water and dive. Get the bikini top. Climb up the ladder and walk over to the lounge chair. Put more sunscreen on and lie down. When the girl comes over, let her leave! She's trouble. After she's gone for a while, leave the pool and go back to your room and change into your leisure suit. Go to the bridge. Go to what looks like a blue stick on the control panel right behind the captain. Pull switch. Now, go to the lifeboats and jump into the lifeboat. At the screen where it shows the whole ship and all the lifeboats being lowered, as soon as you start drifting away, type WEAR WIG and throw the spinach dip overboard. That's it until you reach the island. Larry 3, to receive Bambi's appreciation, Go back to your locker, unlock it, and remove your sweats. Then close the locker again and go to the top left door. Take a shower (using the soap!) and when you leave, DRY OFF with the towel. Go back to the

locker, use the deodorant, and wear your suit. Close the locker. Then leave the locker room and enter the top door with your keycard. Go right up to Bambi and look at her. Talk to her, then "HELP BAMBI" with her video problem. She'll show her appreciation!

LEGEND OF KYRANDIA

? I'm stuck in Legend of Kyrandia - book 1. What gems in what order do I have to put on the Marble Altar? (Timbermist woods). I have the scroll and a lot of gems, but I don't know the proper order. Please Help!

DANIEL MACKIE
KINGAROO, QLD.

* You've got your altars mixed up there Daniel, here's how it works. At the beginning of the forest two screens to the right you will find a pond of (salty) water. Click on the pond and get a teardrop. Proceed to the right. A leaf should fall and will turn into a (green) peridot. Pick up the peridot (on your way around this place, you will find an Amethyst. If you do find it, pick it up also. It's a purple jewel).

After you pick up the peridot, go up and then left. Here is the Forest Altar. Pick up a lavender rose here. Go to the right (the Amethyst usually appears here).

Let's proceed back. Go left, left, down, left, left, left, left. Here lies a half-dead willow tree. Use the teardrop on the willow. Merith comes a long at this moment and asks you if you want to play.

Merith has the marble so follow him to the right. Follow Merith until he has disappeared. Go to the south. Go south again and then to the left. There's Herman. He tends this bridge, which is now broken. Talk to Herman. Give your saw to Herman. Leave the cave to the right and go north and north again. Go all the way to the left until you can no longer proceed that way. Now go up and enter the church building. Brynn enters the room. Talk to Brynn. Give Brynn the note. She will decipher it for you. Give Brynn the lavender rose. You now have a silver rose. Leave this place and go south. Go all the way to the right and then up. Merith should be here. Just watch. Pick up the marble when Merith is gone. Go to your right. Here is the forest altar. Use the marble on the altar. Use the silver rose on the altar. You now have the amulet. Now go left and all the way south and then left again. You're back in the cave, and by this time, Herman should have fixed up the bridge. Now you can cross the bridge safely.

SAM AND MAX

? Hi, I am hopelessly stuck in Sam and Max. Call me stupid, because I know you have given many hints on this part of the game but I still can not work out how to use the binoculars!!!! You said to use the flashlight to find a fisheye lens. Please tell me where and how! My sanity depends upon it. Also, while you're at it, a hint on where to find the stopper for the snoglobe would be much appreciated.

ANNA FOX
MARRICKVILLE, NSW

* Righty ho Anna, we'll go through it AGAIN Here's how you get the fisheye lens.. At the carnival, use the orders on the fire-eater. After talking to the Kushmans, pick up the fur and the bottled severed hand in the hall of oddities. Exit by the rear door. In the Wak-a-Rat stall, get the fishbowl lens. Play Wak-a-Rat, take the prize (a torch) and combine it with the light-bulb. Now, all you have to do to use the binoculars is to use the cablecar to reach the top of the Ball. Use the pil-

ot of Mole Man Powder. Exit this room, go through the curtained entrance and get the fur from the floor of the Yeti attraction. Return to the Ball of Twine (diner) and use the binoculars. Use the wires on the binoculars. Control the speed of the binoculars by clicking the "switch"... When the rock between the two attractions mentioned by Shuv-Oohl appears, stop the visor spinning. The rock should be Frog Rock - if not, keep tracking around until another rock appears. When you locate Frog Rock, drive over to it.

STAR TREK, DEEP SPACE 9 HARBINGER

? We're completely stuck in Star Trek, Deep Space 9 Harbinger. We're inside the Scythian Citadel but are unable to reroute the power to the transporter systems. Please help.

JOHN VOYSEY
DUBBO, NSW

* Here's your answer John, plus a little more. When you crash in the citadel first thing you do is fix try to fix the trans-

this to get the beam to the other side. After this go straight down to the bottom of the red connection to light the red. Finish connection with White using the same way you did red all 3 beams will past though the one with nothing in the centre of it.

Before leaving the runabout remember to get a phaser from the back cabinet. The best way to get through the Maze. The maze has five doors, one you came in and the others you have to go through in the right order. By the way, there's probes that fire at you in the maze.

The best way to solve the maze is to first head for the centre of the saving the game once a move. Then head up until you find the turbolift that takes you to the power transfer room. At the power room there will be two working panels which have symbols that look like the probes, click on both of then one time and you will have turned the probes in the maze OFF. Then go back to the maze and head back the way you came until you see two doors, one has a green panel from



lar in the centre of the area to operate the elevator. Once in the diner, talk to the tool-bender and ask him about the spanners; he'll give you one. Get the wires and use them on the binoculars. Use the fishbowl lens on the binoculars. The final use of the binoculars is such, talk to Shuv-Oohl and give him the Mood Ring. He'll give you some advice about Frog Rock and a bottle

porter, check the control panel it will tell you too manual reroute the ODN Conduit. The easiest way of doing this is starting with blue and running it straight down until you come to the bad switch. Then just go around it by going to the left then finish at the bottom. The next is the red, move the Switches so they go to the one that has nothing in the centre. Use

the door you came in from. Head for the other, go in though the door and activate the first generator. Then from that door you can see the other side of the maze. Head for the door that is straight across from the door you are at and you will find the generator. Generator 2 is there turn it on, and then head back to the centre of the maze to the power room.

CODE

GAME TOO HARD FOR YOU? CHEAT THEN! IT'S MUCH EASIER THAN USING SKILL!

DIE HARD TRILOGY

In the game (any of the 3 sub-games)

Push **esc** for pause, then hold **R** and **2**, keep holding them! Then:

For Die Hard 1:

right, up, down, E = GOD mode

right, E, down, 0 = 50 Grenades, Smoke Bombs Etc.

right, up, down, down, E, right = GUNS (repeat for different guns)

Die Hard 2:

right, up, down, E for Guns, Twice for GOD mode

right, E, left, 0, A, down, E for heaps of missiles and grenades

Die Hard 3:

left arrow, O, up arrow, down arrow, E, right arrow for Unlimited Lives

if you've typed the codes correctly the game will unpause.

Alternate codes:

Codes: pause the game at any time while entering the codes!

Key:

R = right arrow

L = left arrow

D = down arrow

U = up arrow

X = x key

O = o key

E = e key

A = a key

Die Hard 1:

REAR = enemies with handguns shoot between their legs

OOEER

DOODAD

DEER

RUDE = God mode

REDO = 50 grenades

REED = Fat mode

DEAD = Sacrifice to gods

10 A'S and 4 R'S = Skeleton Mode

RUDDER = unlimited items (type it in once you'll get a shotgun, twice, a ps, etc.)

Die Hard 2:

DARE = God

LARD = Aim only moves when you want it to move

RUDE = Once for any gun, twice for God mode

DEAD = Skeleton mode

RELOAD = Lot's of grenades and missiles

Die Hard 3:

FOXOELXDL = Knocks cars farther back and sometimes flips them over

LOROEFAXAR = Disables Turbo

ULTIMA UNDERWORLD

To use the codes, hold down **F10** and hit one of the letters:

G = Unlimited strength

I = Increase light

W = Skip to next level

Z = Stop monsters and the time

VIRTUA FIGHTER PC

Cheat codes:

Button A = DEL

Button B = END

Button C = PgDn

Start = ENTER

Play as Gold Dural:

In the Character Selection menu, press

Down, Up, Right then DEL+Left

If you did it correctly you will hear a woosh sound.

Play as Silver Dural:

At the character select screen, enter

Down, Up, Right, DEL+Left

You will hear a "swoosh" sound effect if you entered it correctly.

Add Dural to the Records screen:

At the "Press Start" screen, press **Up 17 times**

Now enter the options screen, and you should hear "Ring Out." Dural's stats are now on the Records screen.

Ring Size and Stage Select:

At the "Press Start" screen, press **Up 12 times then ENTER**

Now enter the options screen, and you should hear "K.O." Move the cursor down to Exit, then

press **down** once more. The cursor will disappear. Press **DEL** and a second options screen will appear.

View credits:

Hold the **DEL** button down during the opening demos to see the names of the makers of VF

Slow motion replays:

At the end of a round, press and hold

DEL+END+PgDn and the replay will

be in "super-slow-mo".

View from other camera angles (in Watch Mode):

Press **F7**

Choose the victory taunt:

Hold either **DEL**, **END**, or **PgDn** before the character does his/her victory stance and you will be able to select which one you see. There is also one reserved for when you get an "Excellent!"

WAGES OF WAR

In the game, type:

BLOOD MONEY = Activate cheat codes

ADJECTIVES = Max out all mercs

BILL = Max out current merc

VERB = Extra ammo

LIBERTY = All weapons and max stats

FILL MAGAZINE = Abdul's magazine gets two of everything

ELBOW ROOM = 999 action points

NOUN = Max health

DEADMAN = Kill all enemies

SMOKE = 25 smoke grenades

TIMERS = 10 satchel charges and 10 timers

911 = 10 first aid kits

STATS = Max stats

MORTAL = Average stats

HOOR = Add one hour to game time

MMIN = Add five minutes to mission time

SET MINE = Place mine at current merc



OH DARN = 100 random mortar rounds launched

BANG = Activate all damage links

EXPLODE = Activate all destroy links

SEND IN THE CLOWNS = Clown theme

OH BOYS = Turn clowns off

WAR WIND

In the game, type these in exactly:

!golden boy = 5000 resources

!the sun also rises = shows all map

!pump an ahrn = full prestige

!the great pumpkin = Win the whole campaign

!on a mission from gawd = Power up

STARGUNNER

To enable cheats, start a game, when you're playing press **F8**, then quit the game (only to the main menu - not to DOS!). Then start a new game with the same pilot you used in the last game. In the shop, press **5 on the numeric keypad** to receive 5000 credits. This can be repeated.

In the game, press **F8** to toggle invincibility.

TIME COMMANDO

Level Codes for the Easy level:

Roman = **YPTERFGZ**

Japanexe = **NKTOLVIF**

Middle Age = **VMXYICCB**

Conquistadors = **FDQLUGGCC**

Wild West = **ZREHQFIR**

Modern Wars = **FBTAWPFC**

Future = **X**

TOTAL MAYHEM

To activate these cheats, hold on

CTL+SHIFT+CHEAT from the base screen.

CTL+C = Gives 1,000 credits.

CTL+A = Allows buying all weapons (use on base screen)

CTL+N = Level Skip (use on base screen)

CTL+P = Move unit to cursor (use in game)

CTL+I = Invincible (use in game)

CTL+R = Shield Restore (use in game)

CTL+M = Monster toggle (use in game)

Java Games

Online fun - **FREE!**

Games are great, and multiplayer games are even better. Internet multiplayer games do have a significant cost involved though, either to purchase the CD or use an online server. There are times when you want something nice and fast and easy to keep you occupied for an hour or so, and here's where Java comes in very handy indeed. All over the Web, hordes of cool little java applets created by computer science students and just general nerdy types everywhere have been appearing. There are literally thousands of java games around the place, little programs that run inside your browser and the better ones can provide hours of entertainment - completely for free. There are a couple of pay for play sites out there, but they aren't generally fantastic enough to warrant shelling out the hard earned when there are so many sites put up and maintained by others just for the hell of it.

Being Java games though, you will of course need a Java capable browser - either Netscape 3.01 or above (2.02 or above for OS/2), or MSIE 3.02 and above. If you have a Java-able browser, just check to make sure that it's enabled first. For Netscape, under 'options -> network preferences -> languages' check that both the 'enable Java' and 'enable Javascript' boxes are ticked, and everything should run fine. For MSIE, check to make sure that the 'enable Java programs' box in 'view -> options -> security' is ticked. If you go to a Java enhanced web page and it seems like the applet isn't working and all you see is a blank browser, don't leave the site straight away, try a be a bit patient. Some of the larger applications will take up to five minutes to load with a standard 28.8 connection.

Once you're sure that Java is enabled, whichever browser you

choose to use, you're ready to go play some games. Here's the hard part though - choosing which ones to play. Seeing as the games are played over the Internet there are a couple of bumps along the way to fun filled play - speed-bumps, or lag. Even though the programs are fairly small and often relatively simple, fast action paced games don't generally work all that well because of this, and while there are plenty to choose from it can be a bit frustrating trying to manoeuvre with a 5 second delay. For more tactical based games, such as the old favourite board games like chess, checkers, Reversi, scrabble and the like, Java games will work fine with a 28.8k connection. Not surprisingly, games of this nature are among the most popular, polished, and most prevalent out there.

BOARD GAMES

Chess

An excellent and almost timeless game, dating back as far as 600AD or thereabouts, that's easy enough for novices to pick up and has enough depth to keep almost everyone happy. A great way to tax the brain for an hour or so, and dangerously addictive. There are numerous chess web pages online, and a couple of excellent Java chess games available as well. Two of the best are Grandmaster Java Chess



and The Fun One. Both require a free registration to be filled out, and offer opponents from across the world at all hours.

Grandmaster has the better looking interface, and a fairly sophisticated chat room, as well as generally more opponents to choose from.

Java Chess Sites

The Fun One -

www.rahul.net/cleh/chess

Play rating: **7**

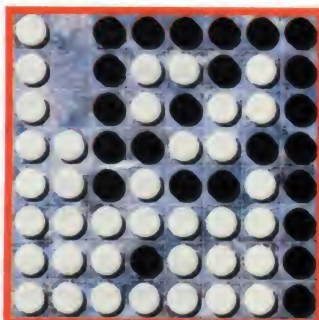
Grandmaster -

www2.tcc.net/chess.htm

Play rating: **9**

Scrabble

Scrabble might sound a bit boring and remind you of those long Sunday afternoons spent with annoying relatives, but it is actually quite fun online - mostly, I think, because of the lack of annoying relatives. There are a few scrabble applets out there, though not as many as there would have been had Hasbro not shut down a few of the sites because of copyright infringement. There are a couple left however, and possibly the best is NET-scrabble. It will work with Java, frames, or just forms and tables (though Java looks best), and has a player matching area to meet and find other players. For those that speak German, there's a German scrabble online as well. Ja ist gut!



Java Scrabble sites

NET-scrabble -

yoda.cs.udw.ac.za/~ns2

Play rating: **7**

German Scrabble -

www.bredex.de/EN/bredex/info/s/start.html

Play rating: **1** (7 if you speak German)

Reversi/Go/Othello

Another classic game that has stood the test of time and remained popular all the way through. The rules are as simple as they come, but it can be hugely taxing on the grey matter. Essentially, the aim is to trap your opponents piece/s between two of your pieces, forcing them to join your side. Sounds easy doesn't it? Well, it is at first, but as the game progresses it gets pretty damn intense. There are heaps of sites that run versions of the game, though only one that allows for human v human play that I could find - and there wasn't anyone on at the same time as me there either. It's still a great game to play, even against a computer and there's enough skill involved to keep you coming back for more, and more, and more.

Java Othello sites

Parallel Java Othello -

www.cs.virginia.edu/~dae4e/java/jothello

Play rating: **8** (9 if multiplayer)

Turncoat -

www.darkfish.com/turncoat/Turncoat.html

Play rating: **7**

Othello -

lg/www.epfl.ch/~wolf/java/othello.html

Play Rating: **6 1/2**

CARD GAMES

Poker

Gambling, and card games of skill and chance are popular Java games online as well, second only to board games. There's a multitude of poker and blackjack games available, with varying degrees of slickness and presentation. Of course, they all use play money rather than the real thing for betting, but they are still plenty of fun. Multiplayer games like Hearts and Spades are covered as well, and these are great fun. Not all that deep or hard to get into, they are both easy, simple and fun.

Java Card game sites

Poker

MIT Poker -
poker.www.media.mit.edu:81/epoker/
 A simple poker game, with opponent avatars that use expressions to display their feelings.
 Play rating: **6 1/2**

5x5 poker

www.serve.com/games
 An interesting variant on standard poker, where the aim is to create the highest score from a 5x5 arrangement of cards. Big fun, heartily recommended.
 Play rating: **8**

Blackjack

www.well.com/user/yimmit/BlackJack.html
 One of the many Blackjack applets out there, this is well presented with a nice interface.
 Play rating: **5**

Hearts/Spades

okapi.dws.acs.cmu.edu/fred/webspades.html
 Both games, Hearts and Spades are well presented, and there's plenty of people to play against. This is great fun, and a great site.
 Play rating: **9**

ARCADE CLASSICS

They'll never die, and that has to be a good thing. The halcyon days of the sit down arcade machines with games like Frogger, Asteroids, Space Invaders, and even Atari style games like Pong and Centipede have been recreated as online Java games and given a new lease of life. The main problem with them is that they are 'twitch' style games where reaction speed is important, and lag can ruin these games completely. However, they're worth a look, even if it's only to bring back some memories.

Java Arcade sites

Frogger

Sam's Frogger -
cizr.anu.edu.au/~sam/java/my_code/frogger.html
 Fairly faithful reproduction of the arcade classic, though it can be a bit slow at times
 Play rating: **6**

Space Invaders

www.magnastar.com/games/space/
 An almost faithful reproduction of the all time classic game, this is quite fast and mostly playable. Well worth a look.
 Play rating: **7 1/2**

Centipede

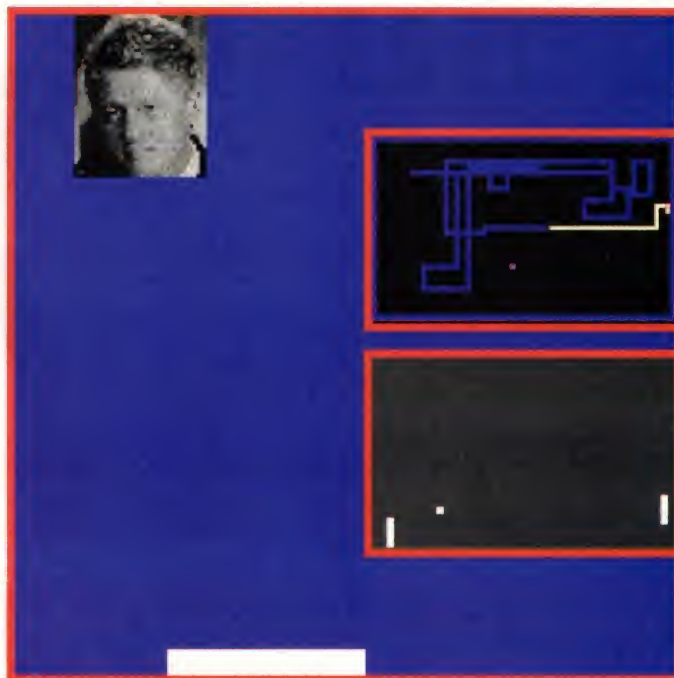
Znake -
www.stud.ntnu.no/USERBIN/steffent/znake.pl
 Extremely simple graphics, and extremely addictive gameplay. Check out the high score list - it's very impressive.
 Play rating: **7**

Asteroids

www.crocker.com/~sigelman/java/aster/
 Another simple interface, with similarly simple graphics. Still a lot of fun to play, but lag can be very very annoying.
 Play rating: **6**

Pong

BillPong -
www.metamor.com/pages/_play/_pages/billpong.html
 Heaps and heaps of pong java games out there, but this one stands out because you get to bat Bill Clinton around. Big fun for a little while.
 Play rating: **5**



PUZZLERS

Tetris

As you would expect, there's plenty of Tetris apps around, and they're mostly quite good. There are enough variations on the theme to keep you saying 'just one more game' for a long long time.

Java Arcade sites

3D Tetris - www-public.rz.uni-duesseldorf.de/~salmon/Trullatris
 Play rating: **6**

2D Tetris

208.5.2.182/game/tetris
 Play rating: **7**

Battle Tetris

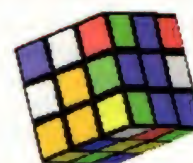
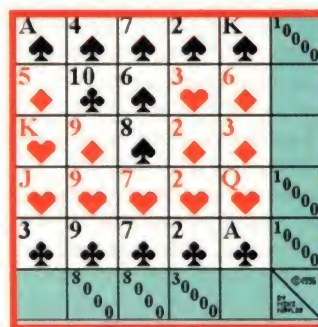
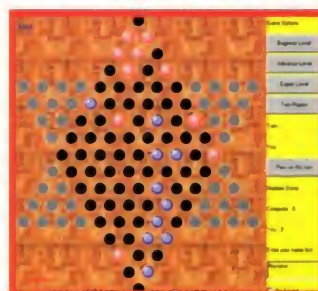
www.cs.umbc.edu/~sliz/tetris.html
 Play rating: **7 (8 with two players)**

Rubiks cube

www.tdb.uu.se/~karl/java/rubik.html
 It probably annoyed you for ages a few years back, and now you can be annoyed anew. Try it at your peril.
 Play rating: **7**

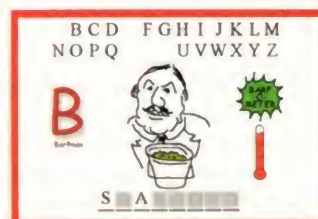
Gareth Jones

(above) **Bill Pong**
 (insert) **Znake** and original **Pong**



(above) **Chinese checkers**,
5x5 poker, **Plastic Frustration Device**.

(Below) **Bizarre hangman**



LETTERS

write to PC PowerPlay
LETTERS
PO BOX 634
STRAWBERRY HILLS, NSW 2012
letters@pcpowerplay.next.com.au

Letter of the month! Win a subscription!

Each month we'll choose a letter that we think is THE BEST that month. Not the funniest (although we reserve the right to hand out a freebie if a letter makes us laugh HARD), but the most intelligent, the most incisive, the most informed.

The winner gets a

FREE 6 MONTH SUBSCRIPTION!

Existing subscribers get 6 months added to their term. How good is that!

What's the score?

I am writing to you not because I want to tell you how good your mag is (although it is very good), but to give you a few ideas on how to improve it.

The main problem I have is that I, just like many other PC PowerPlay readers, don't just buy your mag to find out what games are on the market, but to get professional advice on what games to buy. A lot of magazines can be extremely biased on their reviews (although this is rarely the case with you) and subsequently many people end up missing out on a very good game, or even worse, buying a really crap game. Take for example The Neverhood. This game scored an excellent 93% (issue 9) in your mag, and after reading the review and playing the demo, I went straight out and bought the game. However I only recently found out that in one of those hopeless British magazines, Neverhood only scored 29% because the reviewer didn't like adventure games. If I had read this review at the time of purchase I would have certainly had doubts as to whether I should buy it and I may not have been the proud owner of the game I am today. Heroes of Might and Magic 2 scored only 88% (a good score but not that good) in your mag but I think it's best game I have ever played. What I'm getting at is that you should put a second

opinion column in each of your reviews, not much, just a few sentences and another score by another writer, to let be sure we are buying a good product.

There, that was my main problem, but I still have a few others. In that little yellow summary box in all of your reviews you should add two things. Number one you should make a recommendation as to who would like this game, and number two, give it a difficulty rating out of ten or so, so that we don't go and buy a game which we are incapable of completing or a game that will be finished by breakfast tomorrow and be left with nothing but a feeling of regret or of being ripped off.

You're the best PC PowerPlay, please try and stay that way.

Martin Manning
Flagstaff Hill, SA

The 88% we gave Heroes of Might and Magic 2 is a damn good score - anything in the 80-90% range is very high in our book. We rate out of 100, not between 70 & 100 like so many other games mags. It didn't get 90%+ because it was a sequel with no significant new features. Besides, the final % doesn't usually tell the whole story. Read the review for the big picture.

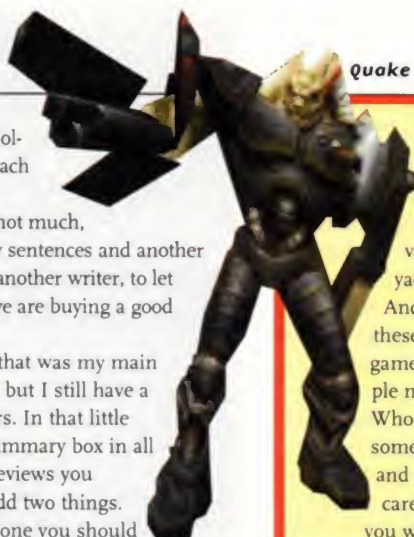
Grown-up gaming

Yes! I always thought there was something lacking with the old PC PowerPlay. Don't get me wrong, the magazine is great, but the presentation and lack of spine and thin paper don't look anywhere near as good as the new PCPP (#12 May 1997). The new order of things is good too, as it was a bit crowded before.

Adam Wade (Letters, May 1997) has got it all wrong. Win95 may be "crap" in parts - particularly if, like Adam obviously has, a slow 486, probably bought five or so years ago. Windows 3.1 is not even slightly capable of running games, and DOS is on it's deathbed, as Microsoft isn't supporting it in the way of new hardware or software releases, and no new DOS games are being started, or a handful if any.

PCs are expensive by nature, though, and a wonderful new Pentium MMX with huge speakers, 3D video card will cost over

Quake 2: New monster



LETTER OF THE MONTH

Have your Quake and eat it

I would just like to raise the point that I am getting very annoyed at people writing in and saying that they like yadda yadda yadda and they hate Quake because it's crap. And this refers to games other than Quake as well. Then these offending people finish their letter by talking about games they like. What's the matter? Are they afraid that people might think they like Quake unless they say they don't. Who cares? If you walked into a greengrocer and said "I want some apples please" you wouldn't immediately turn around and say "But I hate oranges" would you. The grocer doesn't care what you don't like as he is only interested in selling you what you want to buy. Not in not selling you what you don't. It works the same with games. I don't give a stuff if you don't like Quake, but for heaven's sake, keep it to yourself if you aren't going to provide some constructive criticism, and saying the graphics are crap isn't really constructive is it? So please try and keep biased opinions to yourselves rather than giving away your prejudices in the first sentence. At this point I would like to say that I have read PC PowerPlay since issue #1 and shall continue to do so for a long period of time, as I feel this magazine doesn't give games good marks just because it's fashionable and isn't in favour of any genre. I feel the only slip up was awarding Red Alert 97%, sure it's a classic, but look at Dark Reign, what's it supposed to get?

Oh and by the way, what's the deal with Quake II, I haven't heard much about it?

Red "Spoonman" Campbell
Fishing Point, NSW

Thanks for introducing some sanity to this progressively degenerating "debate". Each to their own - it applies to games and life in general.

Yup, we were a little too generous with Red Alert's 97%, can't deny that for a moment. All games have flaws, and because Red Alert has attracted more scrutiny than most, its minor shortcomings have become major bugs simply because the whole world is playing this game so hard. Remember though, that each game's % rating is a judgement call at the time based on its merits, not a comparison with past games. Go back a year or two and compare a 90% game with a 90% game today. Obviously superior technology and general advances in game development mean that the newer game will be better.

When it comes to assessing a game's score we certainly compare it to recent games of the same genre, but to benchmark it against every score thus far awarded is missing the point. Each stands alone and should be read as such. Last month we gave Dark Reign 94%. It's a hell of a lot better than Red Alert (although in hindsight we should have given Red Alert a similar mark), but at the time Red Alert was god's gift. Now, so is Dark Reign. A rating is part comparison, but mostly an assessment of the game itself.

\$2000. It will last for another three years, until the inevitable new upgrade.

I suspect that people like Adam should stick to a Nintendo 64 or something. I personally have been tempted by these machines but won't ever get one, preferring instead to enjoy games with depth, features, complexity and quality not possible on consoles.

Also, a percentage of letters to PC PowerPlay have been obviously from young teenagers. I don't mind this, but when they are as easily dismissed as the bizarre letter Adam Wade wrote, well, I see PC PowerPlay as a adult magazine,

as in children complaining that Win95 is crap and selling it for \$5 is good for comedy value, but anyone with a genuine interest in PC gaming would realise that, despite upping the processor speed a bit faster than we all would like, and the pretty much undeniable fact that Win95 isn't anywhere as good as any of us would like it to be is a separate point to the conclusion that (again) anyone who can see how the PC market is going can understand that Win95 is going to be required if your going to use a PC in 1997.

I hope you can consider answering future children's letters with

something like the following:-

"Get a console and maybe you'll realise one day when you grow up that a Wing5 PC is admittedly more expensive. But consoles has extreme limitations, despite some of the most amazing games around at the moment. A PC you buy today is guaranteed to still be running new releases in five years time and do a million more things than any console. Basically I agree that Windows 95 isn't all that it could be. But that's irrelevant when you see Red Alert running in Wing5 mode versus DOS"

Steven Marshall
North Mackay QLD

We don't try to make PowerPlay strictly an "adult" mag, but more one that is intelligent and mature. That way all the intelligent and mature kids out there have somewhere to turn that isn't all smart ass and attitude.

Tactical strategy action

First of all, I'm not the type of person who likes to suck up, it's not my principle but I'd like to congratulate you on making one of the best gaming mags around. Now, I'd like you to explain to me your definition of strategy and what type of games you consider as strategy.

After careful examination I have concluded (on my terms, that is) that Red Alert is not actually a strategy game (Yeah, and you probably think I've been hit on the head too many times or something) but where is the strategy? There is no line of sight (pillboxes can fire on infantry the other side of a building!) and only one way to win, that is to build up tons of tanks and rush the enemy (any other way would see you playing mission 8 for three hours). This makes it too easy because there is very little thinking involved (maybe some good timing and co-ordination, but very little thinking).

Your strategy guide in issue 11 is not very accurate, you see, not many people want to spend 5 hours running around with V2's and rangers trying to weaken the enemy using pissweak tactics, and not many people use the MIG or Apache alternative in multiplayer (People learn lessons, the computer doesn't), cutting those things out, you could always bombard the enemy with Cruisers (which I may add you can make

go faster by starting to move a transport and then grouping the transport with the Cruiser, thus speeding the Cruiser up... it's a bug!). But they are easily taken out by MIG's and submarines (Destroyers are too slow to get there before the subs let off a few torps, and the Destroyer missiles are too slow to hit MIGs). That leaves only one feasible tactic. Use your tanks and rush the enemy bases like it's a hot chick.

Nevertheless, people 'try' to use their brains to win eg "oh, maybe I should land on this beach" but, as I gave this advice to a guy at a computer store, "you should have used your YAKs to destroy the enemies construction yard before they could build AA guns!" I realized there is but only one sure way to win. Use your tanks to rush the enemy first. The computer is a tank rusher, so any other tactics won't work. That is why I am hanging out for Dark Reign, real strategy, mmm!

God bless You

Harvey "Juggernaut" See
Melbourne, Vic

PS. Join the Melbourne Modem Multiplay Games Group and play games like Diablo, RA, C&C, Mercs, NetMech, Screamer, Duke3D and Quake (can't get it to work though), + many more. Be placed on ladders! There is also gonna be a download area for specialized tournament levels and the latest patches!

E-mail: scottw@alphalink.com.au

In the beginning, there were hex-grid, turn-based, hit-point randomness strategy games. Now we still have these (in declining numbers), but the "strategy" market is now flooded by real time versions of the above. These games have every right to be called strategy. Hell - even Red Alert is strategy, just lame and basic strategy, is all.

Mr Macquarie dictionary says: "the science or art of combining and employing the means of war in planning and directing large military movements and operations". That just about covers all the games we call, and see called, strategy.

You are on to something though. Strategy is a broad term and the genre is fast splintering. Perhaps we need a "Tactical" genre label which refers to games of localised, unit-centric action like Red Alert or Dark Reign, as opposed to "big picture" games like Civilization 2.

FREAK OF THE MONTH

NEW THING!

What

For most of us our computer desk/room is the center of the universe. It's where our most meaningful life experiences occur, our most noble conquests, our most humiliating defeats. It's also either a miracle of ergonomic perfection, or an excellent example of mass storage, where what superficially resembles an explosion in a garbage dump is actually a carefully constructed system of filed manuals, tech support supplements and the like.

How

We want to see your desk/gaming center! We also want to know exactly what kind of freak you are. Be famous! Be a legend! Send in a photo of your gaming environment (showing as much as possible of your environment, and if you must, yourself), a screenshot (optional) of your Win 95 desktop and your witty answers to the following questions, plus what sort of gear you're running (no lying!). A short description of yourself and what's wrong with you too, if you want. Every month we'll run the one that we like best. The winner gets a free game!

Who

For this debut edition of FOTM we managed to rope in our Setup writer to show us his pride and joy. As you can see he's a complete tech head, which is why we employed him to write Setup in the first place. He's also a freak, the case you see below didn't come black, he painted it black.



Ashton "Mr Tidy" Mills' room.
Note painted black tower



Ashton's desktop

Freak File:

Ashton Mills

Age: 23

Profession: Journalist

Likes: good games

Dislikes: crap games

Favourite sport: Er... sport?

Favourite gaming food: Junk

Favourite gaming drink: any alcoholic beverage

Favourite TV: Babylon 5

Favourite music: 80s

Top three favourite games of all time:

Dune II

Bards Tale III

DOOM with Aliens TC add-on

Top three favourite multiplayer games of all time:

Stars!

DOOM II (not Quake)

Crossfire (X-Windows game)

Online/multi nicknames:

Acme, Mad Martigen

Longest time spent playing one game and what was it?

Dune II

How long have you been using computers?

Since Adam Ant was a trend setter.

What other computers have you owned?

Spectrum 48k

Commodore 64

Olivetti 286 16

Clone 386 33

Clone 486 50

Clone 486 66

Clone P133

SYSTEM

NAME: You sexy beast (you should get out more Ash. Ed.)

MODEL: Custom built

CPU: Pentium 200 MMX

RAM: 64M, SDRAM

MOTHERBOARD: SuperMicro P5MMS, Intel TX Chipset

L2 Cache: 512k

BIOS: Crappy AML, wants Mr.BIOS

STORAGE: Adaptec 2940UW SCSI

DRIVES:

2 x 4.1G IBM DCHSo4 Ultra Wide SCSI

Iomega Jaz SCSI

Toshiba 4x CD-ROM SCSI

VIDEO: Matrox Millenium, 2M

3D: Orchid Righteous, 3DFX

MONITOR: Sony Multiscan 17"

SOUND: Gravis Ultrasound PnP Pro, 4M

NETWORK: Cheapo ISA NE2000 compatible

JOYSTICK: Wingman Extreme

OPERATING SYSTEMS:

OS/2 Warp 4

DOS 6.20

Windows 95B

Windows NT 4

All of the above managed by System Commander

EXTRAS:

Second fan to cool hard drives

Reinforced MACASE medium tower case

Sound pumped out to amp and speakers

WEIRD STUFF:

Olivetti pre-1990 keyboard,

still going strong

Painted case black

Black mouse (purchased black)



Ballit

ALLIANCE

When gameplay was all they had



BY ASHTON MILLS

It was a quiet night. TV was boring, my eyes throbbed from constant monitor exposure and a distant part of my brain suggested quite politely that sleep might be an option. I shrugged off the meanderings of my tired mind and glanced around the room. In the corner sat a pile of boxes that I hadn't bothered to unpack since I moved in. They were special boxes, for in them were the very beginnings of gaming history.

For a brief second I entertained the idea of setting it up. I laughed at the ridiculous notion, thought for a moment, and then proceeded to unpack one of the boxes.

All was well with my humble

Commodore 64 — I had the tape drive, a disk drive and a box of games whose brilliance was equalled only by the mountain of dust under which they lay.

I was missing the RF connector. Since when have physical realities ever constrained upon the gaming desire of a techies such as I?

Never, so I set about mutilating a nearby RCA cable. Five minutes and twisted copper wire later I had an RCA jack connecting out of the C64 and into the TV through what can only be described as an 'Ok, the wires are touching, don't knock it' connection. I turned the power on and set the TV to search for the signal. The signal came in and the

much loved Commodore 64 welcome screen displayed.

I sat there, in awe.

My old friend had come home, and with it all the memories...

They were the days...

By now some of you are nodding with ancient understanding, while others are wondering what the fuss is all about. If you're in the latter, it's obvious you've missed this era of gaming evolution.

You'd be hard pressed to find a PC gamer who didn't start their addictive habit on a much more primitive system. Two such sys-

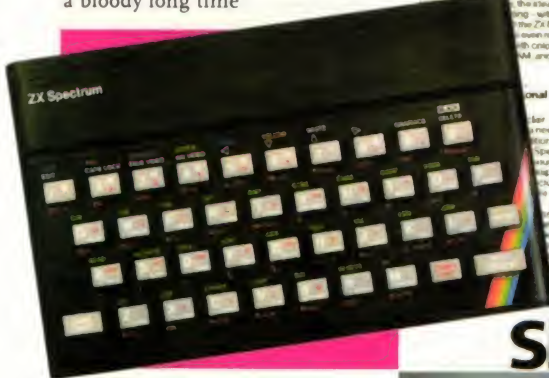
tems, often termed 'consoles' due to the integrated design, reigned supreme in the 80s — the Sinclair ZX Spectrum and the Commodore 64. These two machines form the history of the gaming industry, the humble beginnings of many a gaming company and the start of a generation of computer game addicted teenagers, some of which now write and produce the glorious pages you currently hold in your hands.

What was so great about these two machines that they became adored by millions around the world? It all started way back when PowerPlay's esteemed editor would have been all but a pimply skinned teenager.

SINCLAIR ZX SPECTRUM

Where games began

The console craze, or rather the 'home computer' craze, started way back in the UK in 1982 (yes, a bloody long time



sinclair



Sir Clive in the flesh. Why do all these computing greats always look nerdy?

ago). A man by the name of Clive Sinclair (now Sir Clive) created the first mass produced, affordable, home computer — the ZX Spectrum. While it's not technically the first PC, it was the first computer of its kind that fell within the price range that every man and his Fido could afford. At £125 (approximately \$250), the ZX Spectrum was a bargain even in its day.

As it happens, the ZX Spectrum was Sinclair's third attempt at producing an affordable and powerful computer. His first machine, the ZX80, was introduced in 1979 and was followed soon after by the ZX81 in 1981. As an indication to the marvels of advancing technology, the ZX81 came with an 8K ROM and 1K of RAM while the ZX Spectrum offered a whopping 16K upgradeable to 48k. And you thought 16 megs wasn't enough.

The ZX Spectrum, affectionately called 'Specy', was sleek, black and had a nasty habit of crashing — a fact referenced by Kryten in Red Dwarf (such was the populari-

Colour and sound...full-size moving-key keyboard... 16K or 48K RAM... high-resolution graphics...

Proven pedigree

Following the world breaking success of the Sinclair ZX80/ZX81, now 400,000 sold in the UK, comes the ZX Spectrum. The ZX80, the first Sinclair computer, was the ideal step-up with up to 1K of RAM, a 16K ROM, and a high-resolution graphics display.

A growing system

Your ZX Spectrum comes with a main adaptor, all the necessary leads to connect to most cassette recorders and TVs (colour or black and white), and two manuals. If you're new to computing, you'll find both manuals of immense help. Together, they represent a course in BASIC programming from first principles to advanced techniques. But if you already have experience of computers, you can skip much of the ground work, and move straight into the colourful world of ZX Spectrum professional level computing. Either way, you don't have to stop there. The ZX Printer — available now — is fully compatible with the ZX Spectrum. And later this year there will be Microdrive for massive extra storage, plus an RS232C network interface board.

Many people will opt for the full 48K RAM from the outset, but if you do decide to start with the 16K version, you will be able to return your ZX Spectrum for a 48K RAM upgrade at a later date — at a cost of around £50.

The ZX Printer — available now

Designed exclusively for use with the Sinclair ZX range of computers, the printer offers ZX Spectrum owners the full ASCII character set — the full range of case characters and high resolution graphics.

A special feature is CRI (Character Resolution) which prints out exactly what is on the screen. It is not without the need for high resolution. Printing speed is 50 characters per second, with 32 characters per line and 9 lines per vertical inch.

The ZX Printer connects to the rear of your ZX Spectrum and a roll of paper 40.5cm x 4.4m is fed in. It is supplied, along with full instructions, further supplies of paper are available in packs of 100 sheets.

RS232C network interface board

The version £20. This interface board will allow you to connect your ZX Spectrum to a wide range of printers, terminals and other computers. The astonishingly low price is possible only because the operating systems are already designed into the ROM.

ZX Microdrive — coming soon

Designed exclusively for use with the ZX Spectrum, the new ZX Microdrive will revolutionise personal computing.

Each Microdrive can hold up to 100K bytes on a single interchangeable disc (5 1/4 inch) — with a transfer rate of 100 bytes per second. And you'll be able to connect up to 8 ZX Microdrives to your ZX Spectrum — they're available later this year for around £50.

Professional performance for only £125 — how's it done?

Quite simply, by combining the best of design, talent and technology. The ZX Spectrum is a true world leader in personal computer products.

Key features of the Sinclair ZX Spectrum

Full colour — 8 colours each for background, foreground and border, plus flashing and brightness intensity control.
Sound — 18 EP (envelope) with variable pitch and duration.
Massive RAM — 16K or 48K.
Full size moving key keyboard — all keys of normal typewriter pitch, with repeat for 100 ms per key.
High resolution — 256 dots horizontal x 192 vertically, use of individually addressed dots for true high resolution graphics.

ASIC (Application Specific Integrated Circuit) — user software can generate 40 instructions per line or other settings.
High speed — 100K/48K — 100 ms on 100K/48K — 100 ms on 100K/48K — 100 ms on 100K/48K.
Sinclair BASIC — extended BASIC — expanding unknown — four to four expanded entry, syntax check, and repeat entry.



Sinclair ZX Spectrum

From only £125!

An ad from Your Computer magazine 1982. The last paragraph of the first column reads "...or a really massive 48K"

ty of the machine). Nonetheless it was the first console with a keyboard and this, to score a pun, was the key — for the first time your average joe could program a relatively powerful machine.

By today's standards the specifications of the ZX Spectrum are all but a joke. The heart of the machine was 3.5MHz Z80A processor wrapped in the aforementioned black box housing rubber keys. Kinky and effective — it made the machine durable and cheap to produce. The Specy dazzled all those who used it with a vast 8 colours and single channel beeping speaker capable of modulating 8 octaves. Output was only to a TV and programs could be saved and loaded on tape through your average household tape deck. It was these features that helped the Specy integrate into many a family and it wasn't uncommon for the little black box of joy to displace the family dog in the affectionate heart of many a child. Make way for technology, Fido.

And then came the games. Basic at first, then slowly improving with



The Sinclair ZX Spectrum can handle sophisticated games programs with high-resolution colour graphics and sound

impressive music and awesome graphics, as much as was capable with the facilities available. Back then these games were a marvel to watch. But worse, they were playable. Completely. Totally. Addictively.

My own experience as a young gaming initiate involved sneaking into my parents room, the 'computer room', in the wee hours of the morning to play games. I was addicted, couldn't get enough. Nothing's changed...

The ZX Spectrum is the great granddaddy of all games machines. It is the much loved Specy that first began the thirst for games that would forever remain unquenchable. This is where it all began.

COMMODORE 64

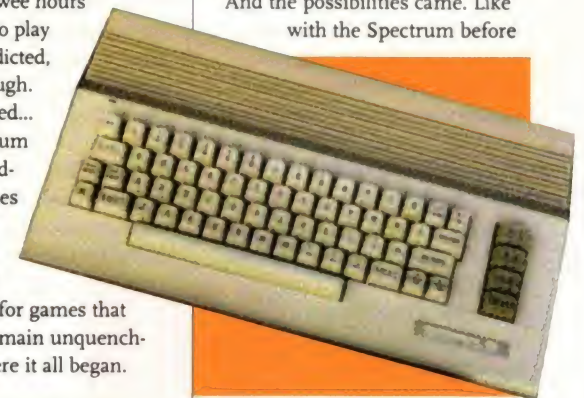
Load "...", 8, 1

The Commodore 64 appeared late in 1982, not long after the release of the ZX Spectrum. Surprisingly, the Commodore was easily acknowledged as the next evolution in the home computer and yet it fell far behind the sales of the ZX Spectrum. Marketing is everything. Still, within a few years the Commodore 64 had its own vast userbase, like the ZX Spectrum, and many Specy owners later upgraded to the Commodore 64.

The rather ugly and often beige

coloured box, affectionately termed the 'biscuit box', sported a 6510A CPU running at 1.02MHz and a vast 64k or RAM. Dedicated chips handled video (the VIC chip) and sound (the SID chip) pumping out an impressive 16 colours and 3 channel synthesised sound. Gamers everywhere drooled at the possibilities.

And the possibilities came. Like with the Spectrum before



it, programmers pushed the machine to its limits, and as time wore on, gamers would never cease to be amazed at the innovative new games that appeared and the way in which every last byte of their hardware was used to the highest possible advantage.

Games on the Commodore 64 shared a common facet with the Spectrum games: they were immensely playable. Many of the addictive game styles on the Spectrum could be found on the C64, only in a more impressive way. Many popular games made the cross platform jump and new improved classics from the Spectrum materi-

alised on the C64 to gain an even larger cult following.

In 1985 the Commodore 128 appeared which, as its title suggests, came with a 'massive' 128k. The C128 suffered that terrible scourge of lax support and as such very few programs ever took advantage of the extra RAM. Most C128's were forever used in C64 emulation mode.

Rarely known, Sinclair released a 128k version of the ZX Spectrum in 1986. Like the C128, this didn't take off either. By 1986 many console owners were looking at newer emerging technologies such as the Amiga, and the rest is history.

That special friend

During these formative years many other 8-bit machines materialised, such as the first Apples, Amstrads, BBCs and lesser known machines such as the VIC20 (precursor to the C64), Apricot and Dragon (not to mention IBM's first highly priced 'personal computer', of which our beloved IBM clones are descended from). All of these fade in comparison to the great gaming leaps the ZX Spectrum and Commodore 64 made.

Primitive though they were, these machines held endless possibilities to the user and the programmer, charting capable and new territories like never before. It's hard to explain to someone who's never used one what all the fuss was about.

In some ways it all comes down to some intangible magic these

machines held. Arcade games were popular at the time and a home computer that could run multiple such games opened the door to what was, as a possibility, years of fun gaming.

For most the fond memories include more than just gaming. Many Speccy and C64 owners learned a respect for their machines, that strange relationship that wavered between love and hate, between the machine doing as it was told and dishing out hours of entertainment and the machine crashing, refusing to load games and, worse still, burning out.

For many it also involved a strange emotional content. The feeling of getting home after forking out every last penny you saved on a game whose packaging dazzled you and promised days of endless play. The feeling of shoving it in the tape deck, excitedly pressing 'play' and watching the ever mesmerizing colours splash across the TV warning you of the impending fun to be had. The feeling of worrying whether the game would load properly or if the machine would crash causing you to develop superstitious paranoid delusions such that you would ensure the tape deck was suffi-

ciently located away from other interfering electronic devices or tip toe around the room, fearful that every step might jog the cassette or even, as a last resort, pray to Murphy and beg that you and your new game should be, for once, an exception. And finally, the feeling of sheer elation as the game finishes loading and presents its title screen to you, begging you to play it and explore the endless genius within.

Hey, at the time, games were life. Nothing's changed, really...

The name of the game

Ok, so now you know what these machines were, but what was so darn addictive about these 8-bit consoles whose computing power is now outdone by your average wrist watch? As it happens, it's this same inadequate technology that led to some of the most playable games of all time. That's what the 8-bit consoles were all about: playability.

The behemoths on which we play our games today are infinitely more capable machines. Back then, all a programmer had to work with was the console itself. There were no real upgrade options for the Commodore 64 or the ZX Spectrum, they came complete. If a game was to be good, it had to be good within the confines of the machine.

Nowadays a game can be poorly programmed because there's always room to move. Game running slow?

Recommend the user upgrade their CPU, install more RAM or buy a faster video card.

It's a cop-out. The programmers that made games for the old 8-bit consoles were geniuses.

Rather than fit hardware to the software, software had to fit to the hardware. There were so many tips, tricks and loopholes to Commodore 64 and ZX Spectrum programming because people eventually found a way to do what they wanted in a game, even when it seemed impossible.

For example, even on the super primitive ZX81 series (pre-ZX Spectrum) games programmers

Emulating the past

If you feel a hankering for the nostalgic, you can re-live those years of gaming glory on your beloved PC. You will find dedicated games-loving programmers have written emulators of just about every platform for just about every platform. There are Spectrum, C64, Amiga, and Amstrad emulators, to name just a few, freely available on the web. In fact, there's even a Spectrum emulator for the Commodore 64 and, even more impressive, a Java based Spectrum emulator — you can run a Speccy in your browser! Below are just a few of the many sites dedicated to these classic and brilliant machines, most of which contain memorable information and pointers to emulators and loads of freely downloadable games.

Oh yeah, and you'll find some emulators and all of the reviewed games on this month's PC PowerPlay CD. Are we good to you or what?!



Spectrum

Planet Sinclair —

<http://www.nvg.unit.no/sinclair/planet/index.html>

Sinclair Software database —

<http://icemark.thenet.ch/zx/ssd/>

Java Spectrum emulator —

<http://www.odie.demon.co.uk/spectrum/>

Sinclair ZX Spectrum FAQ —

<http://www.jetman.demon.co.uk/speccy/faq/emulator.html>

This last site includes Spectrum emulators for the PC, Amiga, Mac, Amstrad, Atari, Windows, UNIX, OS/2 and NeXT!

Commodore

C64 Stuff —

<http://www.gla.ac.uk:80/~clubs/WebSoc/~9405247a/c64.html>

Greg and David's C64 Web Page —

<http://www.ozemail.com.au:80/%7Egvincent/>

The Commodore 8-bit WWW Server <http://www.hut.fi/Misc/kbm/>

Other Commodore related links

<http://www.student.nada.kth.se/~d93-alo/c64/links.html>

This last site has a vast and comprehensive list of anything Commodore, if it exists it'll be here!

managed to produce hi-res games (well, relatively) by re-writing the ZX81's display routine and adjusting pointers to the machine's ROM. This is equivalent to re-writing how your video card works and screwing around with the BIOS of your PC. Such dedication just to create games! More impressive than this, is that the ZX81 had just 1k of RAM. 1k. That's not small, that's unbelievably minute. And yet one dedicated programmer at the time managed to fit all the complex equations and rules of chess into this 1k in a program which became known, not surprisingly, as 1k Chess.

This breed has come and gone. This sort of dedication is rarely seen today.

It was this same dedication that led to amazingly playable games. When you've only got 64k or 48k to work with, you've got to choose how you use every single byte. Think about this: 64k is the upper limit on the Commodore 64. Within this small space, equal to the size of COMMAND.COM in DOS 6 and below (the shell that allows you to interact with your disks), there were games made which were so playable that some still put PC games to shame.

This sort of hardware restriction forced developers to be innovative. Every imaginable game genre started here. Everything you see on the PC today, from platform games to strategy games to simulations started on the ZX Spectrum and the Commodore 64. Even the first person perspective games (you know, DOOM) started back here. They weren't exactly shooting games, more line drawn 3D maze adventures, but the concept was there nonetheless.

And in this respect, it's rather sad. PC games today fit within perhaps ten popular niche genres. Back in the 80s, every genre was popular, every game had a chance to be big. I have never seen a game since as new in its ideas and as brilliant in its gameplay as The Sentinel.

Nowadays, developers on the PC would rather go with a tried and tested popular genre rather than think up new game ideas and try them out. How many DOOM clones have we seen? How many Flight Simulator clones? How many Ultima clones? What ever happened to the Sentinels, the Tetris', the Arkanoids and the Elites of this world?

We owe the gaming past a quite a lot really, so now we'll take a quick squizz at some of the classic games that ran on these classic machines.

Five Speccy greats:

JETPAC



One of Ultimate's all-time classics and many a Spectrum owner's first game.

It was basic in its implementation but a nifty game idea nonetheless, basically because it allowed infinite possibilities in level design. In short you had to rebuild your rocket and refuel it on every screen by picking up the parts and dropping them on top of each other. Sounds easy? Not when you've got to dodge and shoot nasties which get sneakier and nastier as the levels go on.

A rather cool cycling laser effect drew many a young impressionable gamer to this game and the semi-realistic gravity fall effect made the game just that much trickier to play. Like just about all games on the ZX Spectrum, it called for fast reflexes and plenty of spare time. This game could never get boring.

MANIC MINER



Willy is a character every Speccy user remembers. Everyone loves Willy, the star of games such as Manic Miner and all of the Jet Set Willy series.

With the agility of truck full of bricks this platform game called for quick reflexes and the patience of a saint. You had to complete a level by jumping around and overcome obstacles to progress, whilst dodging nasties and running against the timer in the form of an oxygen bar. Sounds quite sadistic really doesn't it? Yet thousands worldwide spent many an hour playing Manic Miner. Brilliant, addictive, and with a theme song that sends shivers down your spine everytime you hear it. A classic.

Bits and bytes of history

Many games companies or notable individuals that started on the ZX Spectrum or Commodore 64 are still in the games business today in one form or another. They have changed and evolved over the years but all of them began on these classic 8-bit systems. If you've played the game, you know the name. The people and companies listed below are sure to ring a bell.

- Ocean began life developing games for the ZX Spectrum and Commodore 64. One of their most popular titles (and much loved) was Head over Heels written by one Jon Ritman (see below), first appearing on the Speccy and later on the C64.
- Gremlin Graphics, who made many a popular Spectrum game are still around today, except you know them as a quite diversified Gremlin Interactive. Gremlin honour their aged beginnings with a web page dedicated to the games of this era at <http://www.gremlin.co.uk/softernopes.htm>.
- Dave Perry, head honcho of Shiny software and developer of games such as Earthworm Jim and MDK (interviewed in PCPP issue 12, page 26) began his programming days writing games for the ZX Spectrum under the guise of Milk-Gen (which some of you may remember).
- Those who recognise the names of John Hollis (known for Quicksilver and Meteor Storm) and Tony Mark (Gyroscope, Paper Boy and Super Sprint - all C64 classics) will now find these guys writing games for Sega.
- Along similar lines, Mike Follin of Bubble Bobble fame now works for Nintendo.
- Jon Ritman, co-author of Head over Heels and Batman, is still around with his own company called Cranberry Source.
- Julian and Nick Gollip, who authored Chaos and Lasersquad, are the owners and programmers of Mythos (the guys who wrote UFO/X-COM).
- Mark Haigh Hutchinson of Vortex (a name not commonly remembered) now applies his talents for the benefit of Lucasarts.
- Steve Kelly, one of the authors of the most amazing Speccy race car sim called Chequered Flag, is an integral member of the Bitmap Brothers.
- John Gibson and Fred Gray, formerly of Imagine, now work for Psygnosis.
- And lastly, perhaps the most notable of all, are the whereabouts of the ever worshipped (and ever secretive) Ultimate - Play The Game team. The Stamper brothers, a duo of immense talent, managed to produce one hit after another for the ZX Spectrum, always pushing back musical and graphical boundaries. Their first 14 releases were all smash hits, averaging a score of 93% in CRASH magazine, making Ultimate one of the most successful software houses of all time. And where are they now? You'll find them under the label Rare, producing arcade coin-ops (such as Killer Instinct) and games for the Nintendo consoles.

Oh yes, and what ever happened to Sir Clive Sinclair? Sadly his company was bought out by Amstrad in the early '90s and he lost the right to produce and sell computers under the Sinclair name. Rumour has it that Sir Clive has moved on to other endeavors (such as his famed electric car of the '90s) and some have said that the eccentric scientist has little interest in computers these days, and doesn't even have one of his own Sinclair machines in his room.

THE HOBBIT



Based on Tolkien's famous book the Spectrum game became one of the first relatively-graphical 'adventure' games to ever grace a computer. A mixture of still picture environments powered with a text interface saw gamers playing for days on end trying to solve the adventure.

Ironically, The Hobbit is said to be buggy to such a degree that the game isn't actually completable. This known, gamers would still play the game to bits for one and only reason: the fun was in the playing, not the completing - as any game should be!

FOOTBALL MANAGER



The soccer fans dream. Ok, so it's mostly full of plain text details, has a boringly basic interface and graphics that could be bettered by the LCD on your microwave but somehow... somehow... this game captured the spirit of football management.

You could elect to play any team on the British grades, you could buy and sell players, take out loans with the bank, choose who your team members and even, for such a primitive machine, watch your boys play and win!

Match results were calculated fully and then 'highlights' of various goals were shown, right down to tackling and goalie saves! It was brill! And ever better, you could rename a player to your own name, so you'd be there, on the field, scoring for your team! Magic.

CHEQUERED FLAG



State of the art racing! Well, at the time. Multiplayer too. Split screen joy. Although it looks incredibly basic now, when the game was released everyone was playing it. Everyone. Racing was fun, and now you could race safely in your own home without getting fined for it.

And, being multiplayer, you could challenge your mates on the tarmac, gauging your speed, going into the pits as required and even wearing out your tyres. Only one of the many Speccy racing car sims, but the best.

Five C64 hits

ELITE



Who could ever forget Elite?

I don't need to say anything else, if you don't know what Elite is then you shouldn't be living.

Oh alright then, for those of you who missed out on what is universally agreed to be the best game of all time, Elite was a space trading and combat game that, to be intentionally cliched, was light-years ahead of its time. Not only was the universe vast, realistic and growing without you, but it was the first game to implement a 3D vector engine with relative speed. The design, the ever changing universe, the vast repertoire of ships, components and tradable items and even the bonus element of the Thargoids combined to make Elite a game you start playing... and never stop. Literally, Elite has no end, it goes on forever and ever and gamers gladly play it till the cows come home.

There have been many versions over the years for every platform imaginable. But even the PC versions, and the later sequels of Frontier and Frontier II (using a different engine) seem to lack what the original had. Originally on the ZX Spectrum, the C64 version is the one to remember, taking advantage of the better C64 technology.

Elite's era has come and gone, but it will always be the best game of all time.

ARCHON

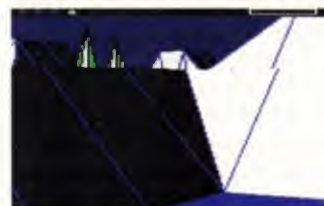


Yep, looks like chess, only it's not. The rules are different, power squares are involved and best of all, it's an arcade action classic all the way. When you take a square

occupied by another piece, you fight it out joystick to joystick, each piece with its own advantages and weapon types. Long before Battle Chess (which is inferior) Archon and its sequel had gamers everywhere enjoying a classic twist to a strategic board game.

Most gamers will remember the mages with their small selection of spells (but each a strategic blow if used at the right time) and the various abilities of the creatures in play. Perhaps the two most feared, one from each side, is the aura-glowing wraith from the black side and the rapid fire unicorn from the white side. It was this sort of diversity between each piece on the board that led to some brilliant one-on-one combats. No other game could have you wagging your joystick at your pal as frequently as Archon.

THE SENTINEL



Another winner in the field of innovative design and adrenaline pumping gameplay — achieved without one moving sprite, big guns or any sort of action at all. Sound interesting? It was, and never got boring.

Probably the only game in history to have over 1000 levels, each unique — not randomly generated — and yet still stored in the form of equations to save space. Each level was a 'rendered' 3D environment which you could smoothly look around. A fixed amount of 'energy' existed in each plane of existence and movement was achieved by absorbing nearby objects and then using that energy to create a duplicate of yourself, anywhere you can see on screen, and warping to the duplicate. Slowly you could climb the mountainous ranges until you could reach the level Sentinel himself and absorb him. Of course, he's not a friendly chap and while you spend time trying to climb higher he's rotating like a lighthouse, seeking out all those who might oppose him. He can't move, but should you stray into his sight he'll suck you dry and it's game over. Hence pressure was always on to keep on the move, whilst trying to work out how to get higher and higher.

A brilliant concept superbly executed. Keeps you addicted for hours playing endless levels that slowly get harder and harder. For ideas and original gameplay, nothing in the computer gaming world has ever superseded it.

IK+



The king of all fighting games. International Karate Plus combined aesthetically pleasing backgrounds complete with the odd flying bird, crawling caterpillar and web wielding spider with a free for all karate beat-em-up that had more moves than a shuriken wielding lone ninja.

The sound track by Ron Hubbard, a musical genius in his own time, is remembered by all who play this game as is the comical attitude portrayed by the karate dealing characters and the aged mediator. Unlike your average multiplayer karate game, this wasn't limited to one or two players — you could optionally play with a computer character and two human characters, making three player beat-em-ups much fun as you dealt with attackers from each side.

BUBBLE BOBBLE



Bub and Bob are two of the most loved characters of all time. Originally they appeared in the arcade version of Bubble Bobble but these two friendly dinosaurs made the transition to the C64 quite well.

If you haven't played Bubble Bobble then you've surely missed out. It was an extremely original game, combining a little thinking with your traditional bounce around platform style game. Bubbles were your temporary method of offense, used to encapsulate nasties which you then dispose of by bursting the aforementioned bubbles. Increasingly tricky levels saw you learning fast how to jump around avoiding and capturing nasties.

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